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Scholastic's Magazine for Today's Elementary Classrooms

TEACHING and computers

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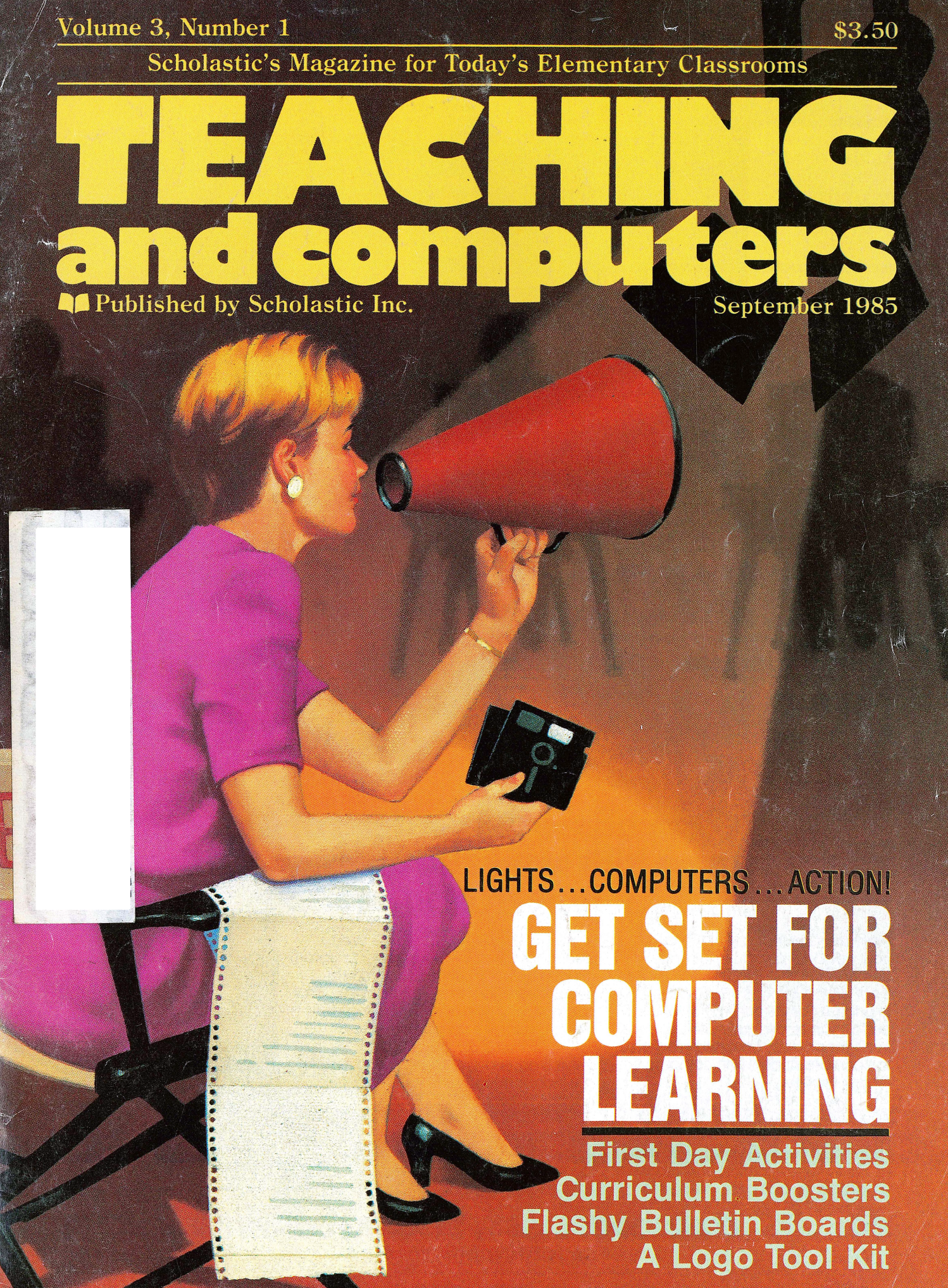
September 1985



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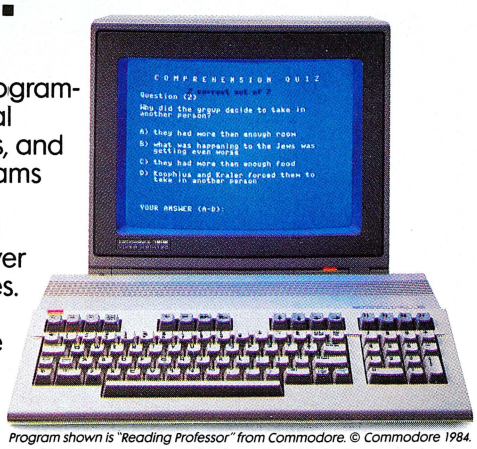

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September 1985 Vol. 3, Issue 1

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Set the scene for a successful computing year with these eight pages of star-studded management tips, first-day activities, and handy reproducible worksheets.

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35 Meet the Logo Turtle
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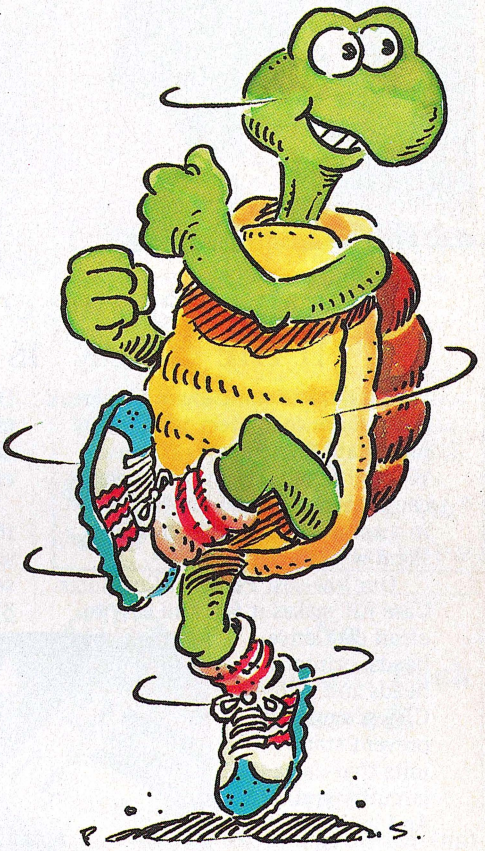

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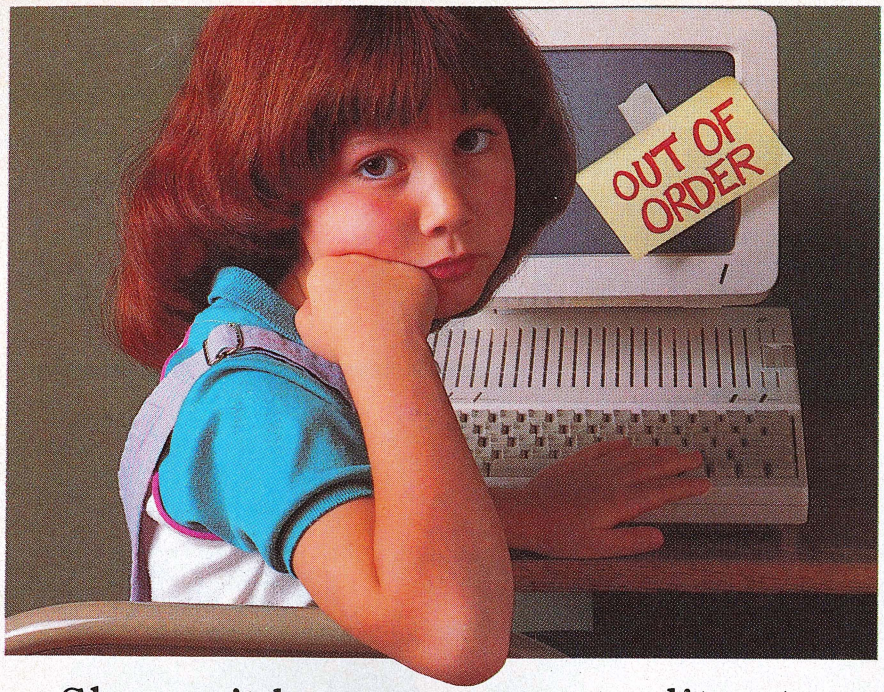

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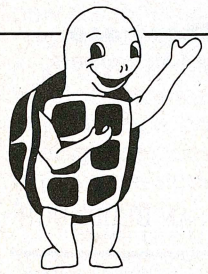

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FROM THE EDITOR

Look to Us for Support

If I had to sum up the philosophy of *Teaching and Computers* magazine in one sentence, I would say that *T&C* is a magazine that *supports* computer-using teachers.

We at *Teaching and Computers* know that teachers are busy people. They don't have time to travel from workshop to workshop, or to read book after book on computers. Just the same, they need to keep up with the computer industry. *T&C* provides you with support in this area. In our **Update** column, page 4, we supply you with current news briefs on the educational computer industry. Our **Software Showcase** column, page 47, previews outstanding software, and **Tools of the Trade**, page 45, recommends new hardware and other electronic products of educational value.

If you have computer questions and no one to turn to for the answers, send them to our panel of experienced computer teachers and technical advisers. Each month in **Ask the Experts**, page 5, these support people answer teachers' questions about hardware, software, and computing philosophy.

There are many teachers out there who are doing a tremendous job with computers. These teachers deserve respect and recognition, and we give them this kind of support in a number of other monthly columns.

Classroom Happenings is one such column. Each month in this column, associate editor Lesli Rotenberg reports on *real* teachers and some of the amazing ways they are teaching children with the help of computers. For example, did you know that in Kansas City, Missouri, teachers have set up a miniature city in which kids use computers to run businesses and conduct a local government? For more details, turn to page 7 of this issue.

Many of our readers tell us they are looking for innovative ways to incorporate computers into their curriculum. "Computer literacy is no longer enough," they say. "We want kids to use the computer to learn basic subjects."

We plan to support you in this area, too. Each month we'll show you how to use the computer to teach topics in at least four different curriculum areas. This month turn to **Computing Across the Curriculum**, page 18, and you'll find 10 computer activities you can incorporate into math, language arts, science, social studies, music, or art classes.

If you are a computer novice or just looking for ways to run a more organized computer center, check out **Get Set for Computer Learning**, page 9, for management support. This feature provides all the tips and activities you'll need to set up a smooth running center and keep kids learning and active on the computer during the first week of school.

Meet the Logo Turtle, page 35, will start you on the right foot with Logo instruction. It provides a variety of introductory activities and tells how to make some valuable teaching tools.

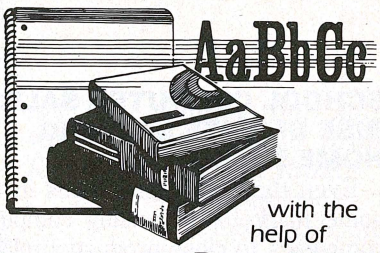
Don't forget to decorate your computer center with our giant-size poster that teaches the **Parts of a Computer System**, page 21. Flip the poster over and you'll find a new feature this year, four reproducible worksheets that reinforce information on the monthly poster. Each month two of the sheets will be designed for primary students and two for intermediate students. Duplicate and hand out the ones for your grade level and you have an instant computer lesson!

You also have an instant lesson each month in **"Micro Times,"** page 25. "Micro Times" is our four-page mini-magazine for kids. It includes news on computers, short program listings, and amusing computer jokes and activities. Pull it out and make a copy for each of your students.

We hope you enjoy our September issue and that you will let us know how we can help support you this year in teaching with computers.

Mary Dalheim

Preparing Grades is as easy as



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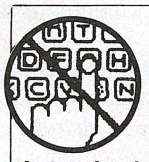

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UPDATE

NEWS FOR COMPUTER-USING TEACHERS

SCHOOL COMPUTER SALES RISE DESPITE SAGGING HOME SALES

Even though sluggish sales in the home market are causing computer companies to close production plants and lay off employees, the number of computers in schools will double this year, according to results of a recent survey by *Education Week* newspaper.

Educators from many states surveyed said they planned to purchase more computers than ever this year. If the prediction of the survey is correct, the number of computers in schools would pass the million mark.

SOFTWARE COMPANIES REVISE SOFTWARE

When educators talk, some software publishers listen. Three publishers have released improved versions of their products, in response to feedback from educators. One of these publishers will even replace old versions for free, and another publisher will offer replacements at a minimal cost.

- Sunburst Communications has improved the Apple versions of *The Factory, The Incredible Laboratory,* and *Survival Math.* Improvements include increased speeds in *The Factory* and *The Incredible Laboratory,* an easier novice level in *The Incredible Laboratory,* and the addition of graphics to *Survival Math.*

Sunburst is providing free replacements of these programs. Call 800/431-1934 or 914/769-5030, or write to Sunburst Communications, 39 Washington Ave., Pleasantville, NY 10570.

- An upgraded version of Terrapin Logo is available for the Apple II. The enhanced Logo 3.0 version loads faster, has more memory, and allows users to access the editor and retain the image they are drawing. The price of Logo 3.0 is $99.95. Terrapin will update existing copies of Logo 2.0 for $20 and Logo 1.3 for $30.

To receive the Logo 3.0 version at the discounted rate, return your current Logo disk and a check for the correct amount to: Terrapin, 222 Third St., Cambridge, MA 02142.

- *The Bank Street Writer II (BSW II)* is an enhanced version of *The Bank Street Writer.* Special features on *BSW II* include a choice of a 40-column or an 80-column display, a window prompt, and an expanded FIND and REPLACE function.

The school version of *BSW II* is priced at $95 and runs on IBM PC computers and on Apple II computers with an extended 80-column card. Contact: Scholastic Software Sales, 730 Broadway, New York, NY 10003.

FREE MATERIAL FOR HIGH TECH MONTH

October has been designated High Technology Month. In response to this designation, the Congressional Caucus for Science and Technology is offering a free packet of activities that lists ways to celebrate. The package includes tips on how to arrange school tours of high tech industries, how to conduct computer fairs, and how to sponsor technology contests.

Contact: Georgianna Anderson-Land, Congressional Caucus for Science and Technology, H2-226 House Annex #2, Washington, DC 20515.

ESSAY CONTEST

Have robots captured your students' hearts and imaginations? If so, then encourage them to enter the Teacher-Friendly Essay contest.

Monday Morning Books is sponsoring the contest to find out what K–12 students think about robots. Entrants must complete this statement in 50 words or less: "Someday robots may be smart enough to teach school. I would (wouldn't) like to have a robot as my teacher because...."

More than $1000 worth of software will be divided among the schools of the three winners selected. Deadline is December 31.

For an entry form, write to Monday Morning Books, PO Box 1680, Palo Alto, CA 94302.

KIT ASSESSES COMPUTER EQUITY

A kit designed to help educators determine if computer inequity exists in their school is available for $9.95 from the Project on Equal Education Rights (PEER).

The "Programming Equity Into Computer Education" kit is divided into four sections. Section one is a synopsis of PEER's report on computer equity in schools. The second section contains questions for students and teachers to answer on how they use computers and instructions on how to evaluate their answers. Activities that can be used to overcome inequities are described in section three. The last section lists computer equity resources.

To receive the kit, send $9.95 to: PEER, 1413 K St. NW, 9th floor, Washington, DC 20005.

MECC STARTS SOFTWARE CLUB

For an annual fee of $150 you can become a member of the MECC (Minnesota Educational Computing Corporation) Club, a software service established for individual teachers or small school districts that cannot afford the $1500 fee to become an institutional member of MECC.

Members in the MECC Club are entitled to six MECC programs, nine issues of the MECC newsletter, and a 30-percent discount on MECC products.

Contact: Teri Leonard, MECC, 3490 Lexington Ave. North, St. Paul, MN 55112; 612/481-3503.

SPECIAL ED RESOURCE

The Special Education Software Center is a clearinghouse that provides teachers with free information on special ed software. It operates a data base that lists evaluations and other important info on more than 250 software programs.

The center also provides free advice on and technical assistance involving special ed hardware.

To reach the center, call 800/327-5892, or write Special Education Software Center, SRI International, Building B, Room S312, 333 Ravenswood Ave., Menlo Park, CA 94025. In Ohio, Alaska, and Hawaii, call 614/263-5462. ■

ASK THE EXPERTS

ANSWERS TO YOUR COMPUTER QUESTIONS

Every month in this column, experienced computer teachers and technical consultants will answer teachers' questions on educational computing. If you have a question on software, hardware, computer management, or computing philosophy that you would like an expert's advice on, send it to Ask the Experts, *Teaching and Computers,* 730 Broadway, New York, NY 10003.

TO CLOSE OR NOT TO CLOSE THE DISK DRIVE DOOR

Q ***Some people have told me that to keep out dust I should close the disk drive door when the drive is not in use. Others say that I should leave the door open, because closing it puts unwanted pressure on the drive head. Which is correct?***

Matthew Warshaw
Queens, NY

A Walter Koetke, technical director for Scholastic Software, says there is truth in both pieces of advice. If dust gets inside your disk drive, it can scratch the surface of disks and disk drive heads. On the other hand, closing the door puts pressure on the disk drive heads. Continued pressure can cause the heads to wear faster.

According to Walter, the best solution is to leave disk drive doors open and cover the computer with plastic when it is not in use. That avoids both potential problems.

REMEDIAL READING SOFTWARE

Q ***Could you suggest some software for my remedial reading students? I teach kids in grades K–8.***

Marsha Folit
Los Gatos, CA

A Sue Ridgley, district reading strategist and Chapter I coordinator in Decatur, Illinois, recommends the following programs.

- *Memory,* a curriculum-based problem-solving package made up of 10 games that develop visual memory skills. Sue uses the "Simon Says" and "Teddy and Iggy" games to help primary students remember sequence. She says the "Memory Castle" game (also available as a separate program) is great for helping students in grades 4–6 remember instructions.
- *Missing Links English Editor,* an authoring program that lets you turn passages from students' reading books into cloze exercises. Sue uses it with remedial students in grades 1– 6.
- *Mix and Match,* a package that contains four matching and word skill games and a word editor. Sue's favorite game is "Raise the Flags," a letter and word guessing game similar to Hangman. She uses this with remedial reading students in grades 1–4.
- *Reader Rabbit and the Fabulous Word Factory,* four fun reading games that Sue uses with remedial students in grades 1–3. In each of the games, students create three-letter words that have the consonant-vowel-consonant pattern.
- *Tutorial Comprehension,* a comprehensive diagnostic and prescriptive reading package that Sue uses with remedial students in grades 4–6. The program tutors students in five reading skill areas: details, critical reading, main idea, sequence, and inference.
- *Word Attack!,* four separate learning activities that teach word meaning and usage to remedial students in grades 3–8. An easy-to-use editor lets teachers add their own vocabulary words to the program.
- *Word Blaster,* a game in which students complete sentences in the cloze exercise format by blasting the missing word from a line of words traveling across the screen. The package includes a disk for second and third grades, a disk for grades four through six, and a disk for customizing lessons and record keeping.

LENDING SCHOOL SOFTWARE

Q ***Parents have started to ask me if they can borrow school software. My instincts tell me that lending our software could lead to problems. What do you think?***

Susan Mann
Kansas City, MO

A We at *Teaching and Computers* advise you to pay careful attention to those instincts. Many teachers tell us they have problems with parents and students who copy, damage, or destroy school software that has been lent to them.

Learning center teachers in the Hinsdale School District in Hinsdale, Illinois, had such problems and as a result, decided to lend only teacher-made software. They say they are opposed to lending their commerical software for the following reasons:

1. Teachers don't have an efficient method for checking the condition of software upon return.
2. Most commercial software leasing agreements prohibit copying. If an attempt to copy is made, the leasee (school) is liable.
3. Some commercial programs are designed to be uncopyable. Attempts to copy such software result in damage or destruction of the software.
4. Other commercial programs are designed to be copied for back-up only. Subsequent attempts to copy this software result in damage or destruction of the software.

SOFTWARE RECOMMENDED IN THIS COLUMN

Following are prices, purchasing sources, and information on machine availability for the programs mentioned in this column.

Memory
Computers: Apple II series with color monitor; IBM PC, PCjr (64K) with color graphics card and color monitor.
Price: $250 for package of 10 disks, puppet, and teacher's guide.

One of the games in this package, "Memory Castle," is available separately for the Commodore 64, Acorn, TRS-80 Color Computer, Apple II series, and IBM PC and PCjr. Its price is $55.

(continued)

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ASK THE EXPERTS

(continued from page 5)

Source: Sunburst Communications, 39 Washington Ave., Pleasantville, NY 10570; 914/769-5030.

Missing Links English Editor
Computers: Apple II series; Atari (48K); IBM PC, PCjr (64K); TRS-80 Models I/III/4 (48K)
Price: $195 for TRS-80 versions; $65 for all other versions.
Source: Sunburst Communications, 39 Washington Ave., Pleasantville, NY 10570; 914/769-5030.

Mix and Match
Computers: Apple II series
Price: $50
Source: Apple Computer, 20525 Mariani Ave., Cupertino, CA 95014; 408/996-1010.

Reader Rabbit and the Fabulous Word Factory
Computers: Apple II series; Atari (48K); Commodore 64;IBM PC, PCjr
Price: $39.95
Source: The Learning Company, 545 Middlefield Rd., Suite 170, Menlo Park, CA 94025; 800/852-2255. In California, call 800/852-2256.

Tutorial Comprehension
Computers: Apple II series, TRS-80 Models III/4 (48K)
Price: $995 for complete set; $225 for each skill area; $80 for all skill areas in one grade level.
Source: Random House School Division, 7307 South Yale, Suite 103, Tulsa, OK 74136; 800/638-6460.

Word Attack!
Computers: Apple II series; Franklin Ace 1000; IBM PC, PCjr; Commodore 64; Atari (64K)
Price: $49.95
Source: Davidson & Associates, 3135 Kashiwa St., Torrance, CA 90505; 800/556-6141. In California, call 213/534-4070.

Word Blaster
Computers: Apple II series; TRS-80 Models III/4 (48K); Atari 400,800 (48K); IBM PC (96K)
Price: $150
Source: Random House School Division, 7307 S. Yale, Suite 103. Tulsa, OK 74136; 800/638-6400. ■

CLASSROOM HAPPENINGS

BY LESLI ROTENBERG

Exchange City has a real city hall, a bank, a warehouse, and several retail stores.

A COMPUTERIZED MINI-CITY

Imagine a city where 10-year-olds operate stores, approve bank loans, collect taxes, and write laws. It's called Exchange City and it's in Kansas City, Missouri.

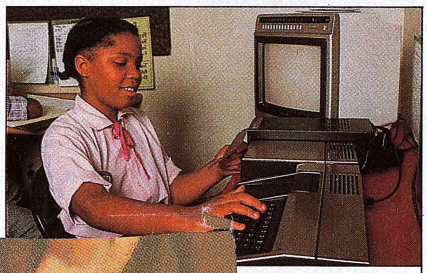
Exchange City is a project of the Learning Exchange, a nonprofit teachers' resource center. Throughout the year, a total of 12,000 fifth graders from 24 area school districts visit the 8,500-square-foot mini-town.

On the day of their visit, students become "citizens" of the town. As citizens they must participate in the operation of Exchange City: in the running of its city hall, bank, town newspaper and radio station, storage warehouse, and several retail stores. The retail stores include a sign shop, a print shop, a jewelry shop, a game shop, a gift shop, a snack shop, and a leisure center.

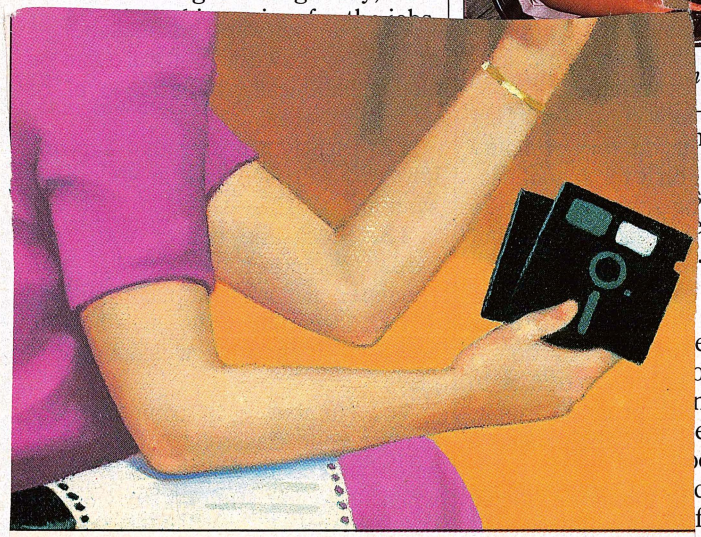
Before visiting Exchange City, stu-

This gives them time to spend the play money they have earned. This money can go toward any of the goods and services provided by the city's businesses.

As in the case of a real town, Exchange City integrates technology into its businesses' daily operations. For example, students who work in the bank use a simple computer program to credit and debit customer accounts. The program warns bank personnel when a student's account is overdrawn. At the end of the day, the computer prints a statement of



its operations.



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a chance to play several different computer games during their free time. The programs include a Hangman-like word game, a logic challenge, a mathematical mystery, and several fast-paced arcade-style games.

Students in some schools use computers to help prepare for their Exchange City experience. Although the students spend only one day in the city, each visit is preceded by weeks of classroom activities that teach economics and practical business concepts. Students learn how to write checks, keep a checkbook register, price goods, borrow money, and manage a business. Many teachers have written computer programs to test students on these concepts.

Teachers also use homemade computer programs to simulate voting booths in class elections. Before visiting Exchange City, students use computers to vote for town officials, such as mayor and judge. These elected officials work at City Hall during their visit.

Exchange City is funded through the cooperative efforts of local businesses, foundations, individuals, and schools. Each school pays $300 for its fifth grade students to participate in the program.

The demand to visit Exchange City by area schools has been so great that a mobile extension program, which includes a portable replica of the mini-town, now serves an additional 4,000 students in Leavenworth and Lawrence, Kansas, and the surrounding areas. Exchange City also sponsors a summer program on economics at the center for students.

The staff of Exchange City provide consulting services to help other communities develop similar programs. Staff members are currently working with school districts in Texas, Florida, and Nebraska to set up mini-cities. For more information, contact Ellen Pittman, Exchange City Director, The Learning Exchange, 2720 Walnut, Kansas City, MO 64108; 816/234-9106. ■

Lesli Rotenberg is associate editor for *Teaching and Computers*.

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Word Attack!
Computers: Apple II series; Franklin Ace 1000; IBM PC, PCjr; Commodore 64; Atari (64K)
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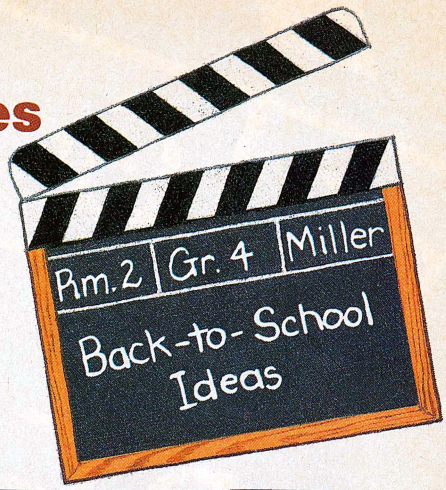
Source: Davidson & Associates, 3135 Kashiwa St., Torrance, CA 90505; 800/556-6141. In California, cal 213/534-4070.

Word Blaster
Computers: Apple II series; TRS-8(Models III/4 (48K); Atari 400,80((48K); IBM PC (96K)
Price: $150
Source: Random House School Division, 7307 S. Yale, Suite 103. Tulsa, OK 74136; 800/638-6400. ■

These management tips, first-day activities, and handy reproducibles will start you rolling.



GET SET FOR COMPUTER LEARNING

Susan Blubaugh

LIGHTS... COMPUTERS... ACTION!

The next seven pages will help you set the scene for a successful year of learning with computers.

First you'll find important guidelines on how to organize your center, how to protect your computer equipment from thefts and unnecessary breakdowns, and what to do when equipment *does* (and it will) break down.

Two pages of first-day activities provide introductory projects that will encourage students to get to know each other—and the computer.

And last but not least are three pages of handy reproducible sheets. The first is a weekly sign-up sheet that you can duplicate and use all year long to schedule computer time. The second helps you organize computer cleanup duties. And the third lets you test and reward (via an official Computer Operator's Test and License) children's ability to work a computer.

So what are you waiting for? Turn the pages and get your computer show on the road!

(continued)

Guidelines to get your computer center organized

SETTING UP YOUR COMPUTER CENTER

Whether you plan to set up a large computer lab or a small computer corner, these organizational tips will help you establish a smooth running center.

1. Position computers so their air vents are not blocked. When vents are obstructed, computers overheat easily.

2. Place computers away from the chalkboard. Chalk dust (as well as other kinds of dust) can cause a computer system to breakdown.

3. Make sure the classoom is equipped with enough electrical outlets. If one outlet must provide power for more than one electrical cord, eliminate extension cord jumble by buying a power strip that contains several electrical outlets. A power strip is available in most hardware stores for $20.

4. Position monitors away from lamplight and sunlight to avoid eye discomfort caused by glare. Direct lamplight toward paperwork and the keyboard.

5. Post easy-to-read operating instructions for all equipment.

6. Reduce static shocks by spraying the carpet around each computer with a solution of one part fabric softener to three parts water.

7. "Burn in" a new computer. That means to leave it on for 24 hours before depending on it for school use. If all is still running smoothly after 24 hours, chances are students will not encounter manufacturing defects.

8. Test-run each piece of new equipment to make sure it does everything it's supposed to do. A good test of the entire system is to type in a long BASIC program, run it, save it on a disk, and then make a printout of it.

9. Check each monitor's focus, resolution, and vertical and horizontal holds.

10. Post a sign-up sheet for students to reserve computer time. *(See page 14.)* This will help organize computer use and ensure equal access to the computer.

11. File software on bookshelves or in filing drawers. Software can be filed alphabetically, by grade level, or by content area.

12. Display a poster that explains how to locate software in your filing system.

13. Stock the center with task cards, computer workbooks, and computer manuals and magazines.

14. Decorate walls and bulletin boards with cheerful, welcoming displays.

15. Number each computer station in your classroom. This eliminates any confusion that may arise when assigning students to work at the computers.

MAINTENANCE AND SECURITY TIPS

The following guidelines will help you protect your computer investment from breakdowns and thefts.

1. Do not plug other electrical devices, such as overhead projectors, into the same outlet as a computer. Doing so might cause power surges that could damage your system.

2. Set up computers in rooms where temperatures do not fluctuate. Most computer experts recommend 60 to 80 degrees Fahrenheit as a good range.

3. Once a computer is turned on, leave it on until the end of the day. This reduces wear and tear on on the computer's main on/off switch. If the screen is distracting, turn it off.

4. Do not leave the same message on your monitor for a long period of time. If input is left on a monitor too long, it may become permanently etched in the screen.

5. Do not allow food, drink, or smoke near computer hardware and software.

6. Every few weeks dust the computer equipment, wipe the monitor screen, and refile disks and other computer materials in their assigned places.

7. If you have a computer lab, set it up so that it has only one entrance that can be monitored easily.

8. You can also help protect computers from theft by placing them whenever possible in areas above the ground floor of the school building. Install locks on computer lab doors and software cabinets.

9. Paint your school's name, address, and phone number on all computer equipment. Identifiable equipment is less attractive to a thief.

10. Record the serial numbers of all computer equipment. If computer equipment is stolen, this information will help police track it down.

11. Encourage teachers to take computers home on weekends and during school vacations. The more time that computers spend in an empty school building, the greater their chances are of being stolen.

IN CASE OF EMERGENCY...

Post this list in your computer center. If your computer breaks down, the first six tips in this list will help you isolate (if not fix) what's wrong with the system. If these six tips fail to get the system up and running, the remaining four tips tell how and where to get additional help.

1. If the computer, monitor, or disk drive won't turn on, check to see that necessary plugs are still in their electrical sockets.

2. If plugs are in their sockets and the system still won't run, check the peripheral ports. Are all the connections firm? (*Peripheral ports* are sockets usually located in the back of the computer's casing. These ports let you connect other devices, such as printers and disk drives, to the computer.)

3. If the connections to peripheral ports are firm, examine the circuitry inside the computer. You may find a loose *interface card,* a card that serves much the same purpose as a peripheral port, but is located inside the computer.

Do not try this tip if you have a brand of computer, such as Atari or Commodore, that does not allow easy access into the computer's circuitry.

4. If all connections are secure and the system still won't work, chances are good that a specific part has broken down. Isolate the troublesome piece of equipment by testing each piece, one at a time, on a working system. This process of elimination lets you send out only the equipment that needs to be repaired and allows you to keep and use the rest of the system.

5. If the computer dies while you are in the middle of a program, the problem could be that the computer overheated. Turn it off and let it cool for an hour. Then try again. To prevent the computer from overheating in the future, direct the airflow of a small desk fan toward the vents of the operating computer.

6. If a program won't load, it could be that the disk is defective. Try booting the disk in another disk drive. If it still won't load, chances are good that the disk is faulty.

7. If you must send your system out for repairs, first make sure you understand the cost and time involved. Get a written estimate of what repairs need to be done, how long it will take, and how much it will cost.

8. If the mechanic estimates that the process will be lengthy, try to get a computer on loan from the shop.

9. If your computer has a history of breaking down, keep a computer diary. In the diary, write down problems you've had, when they occurred, and what you did to try to fix them. When you need to bring the computer to a repair shop, bring the diary and let the mechanic read it.

10. Finally, use your computer's customer service telephone number. Listed below, you'll find customer service telephone numbers and addresses for some of the more popular personal computers. Some of the numbers are even toll-free.

The operators who answer these calls sometimes handle hundreds of inquiries a day, so try to be as specific as possible when asking questions or explaining problems to these operators. Often the operators are computer technicians who can give you suggestions and remedies to try right over the phone.

If the operator is not able to help you fix the computer, he or she can give you the name and address of your computer's local, authorized repair dealer.

Apple: 20525 Mariani Ave., Cupertino, CA 95014; 800/538-9696.

Atari: Customer Relations, PO Box 61657, Sunnyvale, CA 94088; 408/745-4851.

Commodore: 1200 Wilson Dr., West Chester, PA 19380; 800/247-9000 or 215/431-9100.

IBM: PO Box 1328, Boca Raton, FL 33432;800/428-2569 or 800/426-3333.

Tandy/Radio Shack: 1800 One Tandy Center, Fort Worth, TX 76102; 817/338-2394.

Texas Instruments: Customer Service Center, PO Box 53, Lubbock, TX 79408; 800/842-2737.

(continued)

Tips for getting kids to the computers on Day One

GREET NEWCOMERS WITH A GRAPHICS SHOW

Last year I greeted my students on the first day with an exciting graphics show. You see, I had a diskful of graphics programs my kids from the previous year had created. I figured out how to flash them on a computer monitor, one after another, in a continuous cycle. As newcomers entered my room, their attention was immediately directed to the show. It was a great ice breaker and gave children a peek at what they, too, would soon be doing in my class. Here's how I set up the show:

First I printed out a catalog of the graphics programs on the disk. Then, I loaded and listed the first program. I substituted END at the end of the program with RUN, plus the name of the next program on the disk. I loaded the next program in the catalog and listed it. Again, I replaced END with RUN and added the name of the third program on the disk. I continued linking the programs together in this manner until I reached the last program. At the end of this program, I told the computer to run the first program all over again. I did this by replacing END with RUN and adding the name of the first program on the disk.

To begin the demonstration, I typed in RUN and the name of the first program on the disk. The computer continually displayed the graphics designs all by itself.

You can stop such a demonstration at any time by pressing CTLR-C, the BREAK key, or the SYSTEM RESET key, depending on the type of computer you are using.

Craig Dickinson
Orono, ME

BREAK THE ICE WITH THIS SILLY RIDDLE PROGRAM

It's only human nature. When we hear a silly riddle, we get the giggles. That's why this silly riddle program is a great way to help your students relax and melt away their first-day jitters.

Type the program into the computer. When a student runs it, the computer asks, WHY DID THE COMPUTER GET A TICKET? The student guesses an answer and types it in. If the student types in the correct answer, he or she is congratulated. If the wrong answer is entered, the student can try again or give up. If the student gives up, the computer tells the student the punch line.

As children use the program, remind them to check the spelling and punctuation of their answers. The computer will accept as correct only those answers that are spelled and punctuated exactly as the punch line in the listing.

```
10 HOME:P$="ITS DISK WAS DRIVING TOO FAST."
20 PRINT "WHY DID THE COMPUTER GET A TICKET?":INPUT G$:HOME
30 IF G$=P$ THEN PRINT "YOU GOT IT!" :GOTO 100
40 IF G$<>P$ THEN PRINT "SORRY, THAT'S WRONG. DO YOU..."
50 PRINT:PRINT "1. WANT TO TRY AGAIN OR"
60 PRINT "2. GIVE UP."
70 PRINT:PRINT "ENTER THE NUMBER 1 OR 2 AND PRESS RETURN OR ENTER." :INPUT C$:HOME
80 IF C$="1" THEN GOTO 20
90 IF C$="2" THEN PRINT "THE ANSWER IS ";P$;". BETTER LUCK NEXT TIME."
100 END
```

This listing is for Apple computers. To convert the program for use on Radio Shack computers, you must make these changes:

1. Add this line: 5 CLEAR 5000
2. Change the word HOME to CLS in lines 10, 20, and 70.

If you have Commodore computers, the following changes must be made:

1. Change line 10 to 10 PRINT CHR$(147):P$="ITS DISK WAS DRIVING TOO FAST."
2. Change the word HOME to PRINT CHR$(147) in lines 20 and 70.

Atari users must make these changes:

1. Add this line: 5 DIM P$(100), G$(100), C$(100)
2. Change line 10 to 10 PRINT CHR$(125):P$="ITS DISK WAS DRIVING TOO FAST."
3. Change the word HOME to PRINT CHR$(125) in lines 20 and 70.

CREATE LETTERS OF INTRODUCTION

The BASIC program at right will help each student write a letter that introduces him or her to the rest of the class.

When a student runs the program, the computer asks a series of questions, including WHAT IS YOUR FAVORITE TV SHOW? and WHAT WOULD YOU LIKE TO BE WHEN YOU GROW UP? The computer inputs the student's answers into a formal letter of introduction and then prints it out.

Here is a sample printout:

DEAR CLASSMATES IN ROOM 5,

I WOULD LIKE TO INTRODUCE MYSELF. I AM 11 YEARS OLD. I HAVE 2 BROTHERS AND 0 SISTERS.

I LIKE TO SWIM. DO YOU SWIM? MAYBE WE COULD SWIM TOGETHER SOMETIME.

MY FAVORITE SINGER IS CYNDI LAUPER. MY FAVORITE SONG BY CYNDI LAUPER IS 'GIRLS JUST WANNA HAVE FUN.' HAVE YOU EVER HEARD IT?

SOMETIMES I LIKE TO WATCH TV. MY FAVORITE SHOW ON TV IS THE 'BUGS BUNNY/ROAD RUNNER HOUR.' IT'S ON CHANNEL 2 ON SATURDAYS.

WHEN I GROW UP I WOULD LIKE TO BE A FIRE FIGHTER. THE MOST IMPORTANT THING A FIRE FIGHTER DOES IS PUTS OUT FIRES.

I HOPE WE CAN ALL BE FRIENDS THIS YEAR.

YOUR CLASSMATE,

After each student has written a letter, make a bulletin board display with the printouts. At the top of the bulletin board, tack up paper letters that say, "Introducing the Members of Room (fill in your room number)." Tack up the printouts in the remaining space on the board.

This program is for Apple computers. To convert the program for use on Radio Shack computers, make the following changes:

1. Add this line: 5 CLEAR 5000
2. Delete PR#1 and PR#0 in lines 140 and 300.
3. Change the word PRINT to LPRINT in lines 140 through 300.

If you have a Commodore computer, you must make these changes:

1. Change PR#1 to OPEN 4,4 in line 140.
2. Change PR#0 to CLOSE 4 in line 300.
3. Change the word PRINT to PRINT#4 in lines 140 through 300.

PROGRAM LISTING FOR *LETTER OF INTRODUCTION*

```
10  PRINT "WHAT IS YOUR ROOM NUMBER?": INPUT N$
20  PRINT "HOW OLD ARE YOU?": INPUT Y
30  PRINT "HOW MANY BROTHERS DO YOU HAVE? IF YOU DO NOT HAVE ANY,
    ENTER 0.": INPUT B
40  PRINT "HOW MANY SISTERS DO YOU HAVE? IF YOU DO NOT HAVE ANY
    ENTER 0.":  INPUT S
50  PRINT "NAME SOMETHING YOU DO IN YOUR SPARE TIME.": INPUT H$
60  PRINT "WHO IS YOUR FAVORITE SINGER?": INPUT R$
70  PRINT "WHAT IS YOUR FAVORITE SONG BY ";R$;"?": INPUT M$
80  PRINT "WHAT IS YOUR FAVORITE TV SHOW?": INPUT T$
90  PRINT "WHAT CHANNEL IS ";T$;" ON?": INPUT C$
100  PRINT "WHAT DAY IS ";T$;" ON?": INPUT D$
110  PRINT "WHAT WOULD YOU LIKE TO BE WHEN YOU GROW UP?": INPUT G$
120  PRINT "WHAT IS THE MOST IMPORTANT THING A ";G$;" DOES?": INPUT J$
130  PRINT "TURN YOUR PRINTER ON AND PRESS RETURN OR ENTER.": INPUT X$
140  PR# 1: PRINT : PRINT "DEAR CLASSMATES IN ROOM ";N$;","
150  PRINT : PRINT "     I WOULD LIKE TO INTRODUCE MYSELF."
160  PRINT "I AM ";Y;" YEARS OLD."
170  PRINT "I HAVE ";B;" BROTHERS AND ";S;" SISTERS."
180  PRINT : PRINT "     I LIKE TO ";H$;". DO YOU ";H$;"?"
190  PRINT "MAYBE WE COULD ";H$;" TOGETHER SOMETIME."
200  PRINT : PRINT "     MY FAVORITE SINGER IS ";R$;"."
210  PRINT "MY FAVORITE SONG BY ";R$;" IS '";M$;".'"
220  PRINT "HAVE YOU EVER HEARD IT?"
230  PRINT : PRINT "     SOMETIMES I LIKE TO WATCH TV."
240  PRINT "MY FAVORITE SHOW ON TV IS '";T$;".'"
250  PRINT "IT IS ON CHANNEL ";C$;" ON ";D$;"."
260  PRINT : PRINT "     WHEN I GROW UP I WOULD LIKE TO BE A "
270  PRINT G$;". THE MOST IMPORTANT THING A "
280  PRINT G$;" DOES IS ";J$;"."
290  PRINT : PRINT "     I HOPE WE CAN ALL BE FRIENDS THIS YEAR."
300  PRINT : PRINT "YOUR CLASSMATE,": PR# 0
```

SCHEDULE COMPUTER TIME WITH THIS BULLETIN BOARD

The bulletin board below is a colorful way to schedule computer time for primary graders. From colored paper, cut out the shape of a large tree and the shape of a fruit basket. Tack the tree to the center of the board and the fruit basket in the lower right-hand corner. Tack up paper letters that say "Pick of the Day."

Have each student cut out the shape of his or her favorite fruit. Tell each child to write his or her name on the fruit and to tack it to a branch.

Each day, "pick" paper fruits from the branches and place these fruits in the basket. Position the paper fruits in the order in which students are to use the computer. Tell students that after they have had their turns at the computer they are to place their fruits in a shoe box near the bulletin board. After all fruits have been picked from the tree branches, empty the shoe box and rehang the fruit on the branches so that students can be "picked" again for computer time.

This display helps schedule computer time.

CLIP AND COPY

COMPUTER LOG-ON

Sign-up Sheet for the Week of _____

TIME	Monday	Tuesday	Wednesday	Thursday	Friday
7:40–8:00					
8:00–8:20					
8:20–8:40					
8:40–9:00					
9:00–9:20					
9:20–9:40					
9:40–10:00					
10:00–10:20					
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2:00–2:20					
2:20–2:40					
2:40–3:00					
3:00–3:20					
3:20–3:40					
3:40–4:00					

Directions: Every week post a copy of this sheet in your computer area. The sheet can be used to sign up whole classes or individual students for computer time. Put an X through inconvenient time slots. Make sure everyone has fair access to the computers each week.

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COMPUTER CLEANUP

Cleanup Checklist for the Month of _____

CREW CAPTAIN: _____

CREW MEMBERS: _____ Computer Cleaner _____ Printer Protector _____ Disk Caretaker

Computer Cleaner For every computer system:	Week 1	Week 2	Week 3	Week 4
1. Dust. Unplug computer and monitor. Dust equipment and nearby area with a cloth.				
2. Clean keyboard. Use a can of compressed air to blow away dust that has collected in hard-to-reach areas of the keyboard.				
3. Clean screen monitor. Spray window cleaner on a cloth and wipe screen monitor.				
4. Plug in computer and monitor.				
Printer Protector For every printer:	Week 1	Week 2	Week 3	Week 4
1. Dust printer's insides. Unplug printer. Remove printer's cover and use a can of compressed air to blow away dust and specks of paper that have collected inside.				
2. Clean printing device. If printer has a removable printing device, remove it. Use a cloth dipped in rubbing alcohol to wipe away ink that has collected on the device.				
3. Refill paper supply.				
4. Check printer ribbon. If it shows signs of wear, replace it.				
5. Plug in the printer.				
Disk Caretaker	Week 1	Week 2	Week 3	Week 4
1. Dust area where disks are stored. Use a cloth to dust the inside of cabinets or drawers where disks are stored.				
2. Put disks in their "jackets" or envelopes.				
3. File misplaced disks.				
4. Dust disk drives. Unplug each disk drive. Use a can of compressed air to blow away dust that has collected in hard-to-reach areas of each disk drive.				
5. Plug in disk drives.				

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Directions: Make 10 copies of this sheet. At the beginning of each month, post a new sheet. Select four students to be the cleanup crew for that month. Assign a different job title to each of the four students: Captain, Computer Cleaner, Printer Protector, Disk Caretaker. The Captain checks off boxes as the chores are completed by the rest of the crew. Chores must be done by Friday. Keep dustcloths, window cleaner, rubbing alcohol, and a can of compressed air in a special cleanup box.

CLIP AND COPY

COMPUTER LICENSE KIT

COMPUTER OPERATOR'S TEST:

_____ knows how to: (Check all that apply.)
(Student's name)

- ☐ Turn on the monitor.
- ☐ Turn on the computer.
- ☐ Get the computer into BASIC mode.
- ☐ Insert a disk in the disk drive.
- ☐ Load a program.
- ☐ Save a program.
- ☐ Restart a program.
- ☐ Exit from a program.
- ☐ Remove a disk from the disk drive.
- ☐ Turn off the computer system.

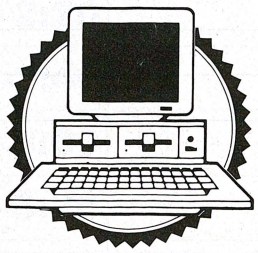
Cut along dotted lines.

COMPUTER OPERATOR'S

LICENSE

This is to certify that _____
(Student's name)

has been licensed to operate the _____ computer
(Computer brand)



at _____ School.
(School's name)

_____ _____
Approved By Date

This license expires June _____, 19 _____. License must be presented upon request.

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Directions: Give each student a copy of this sheet. Each time a student performs one of the tasks listed on the Operator's Test, check it off on his or her sheet. After a student has performed every task listed, fill out the Operator's License at the bottom of his or her sheet. This student is now permitted to operate a computer independently.

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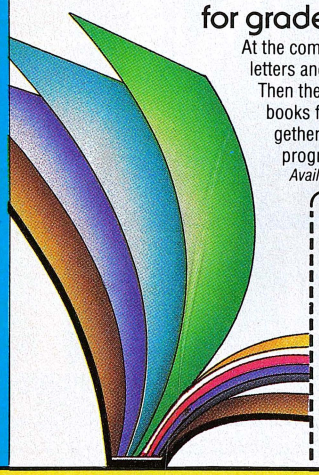
Available for Apple and Commodore Computers, 64K.



Mail to: Scholastic Inc., P.O. Box 7502, 2931 East McCarty Street, Jefferson City, MO 65102

Name

School

Address

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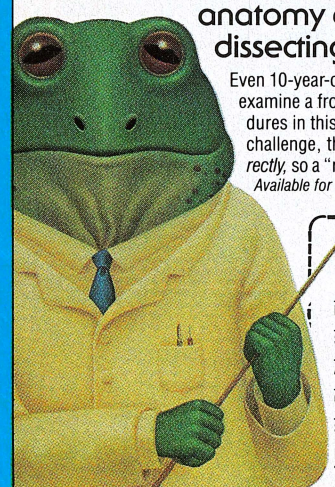

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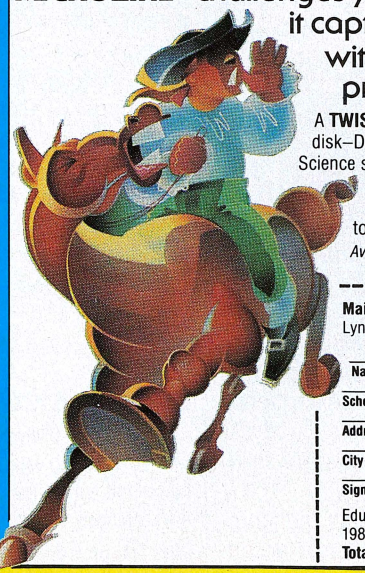

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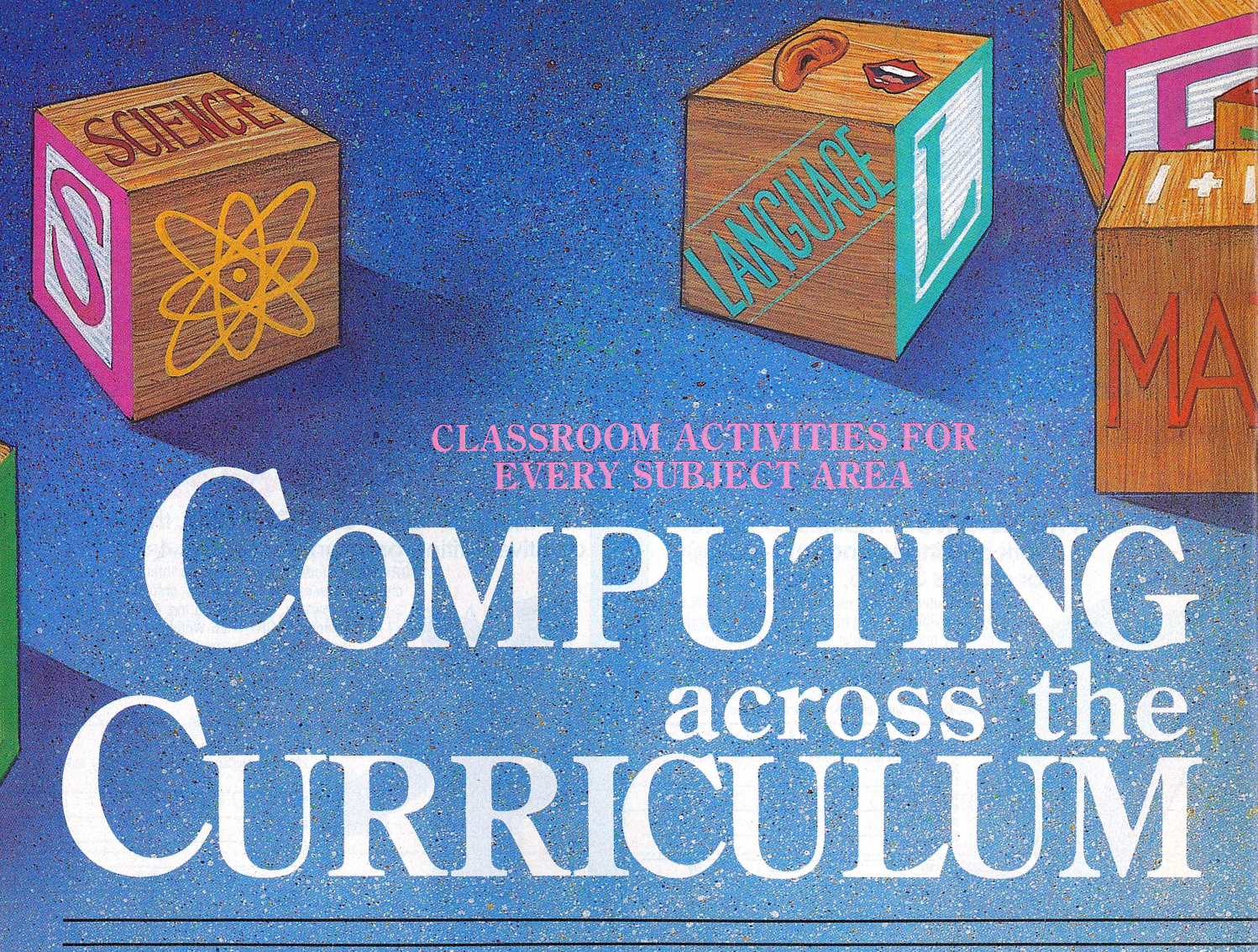


CLASSROOM ACTIVITIES FOR EVERY SUBJECT AREA

COMPUTING across the CURRICULUM

You can make the computer an important teaching tool throughout your curriculum this year. For starters, try these short activities. They're guaranteed to boost skills in language arts, math, social studies, science, art, and music.

TWO-STEP WRITING GAME

Here's a fun writing game you can play with a computer and a word processing program.

Start by typing a story starter into the computer. I use the kind that begins to describe a natural sequence of events, such as: "Joe's family is going on a picnic. The kids are loading the car. First they..."

Have students approach the computer, one at a time, and add a sentence, plus two more words to the story. (The extra two words encourage the next writer to build on the previous writer's thoughts.)

After the story is finished, print out a copy for each student and one for the bulletin board.

Now go back to the computer and remove every fourth word from the story. Type a dash in the place of each word you remove. Then print out copies of the new story.

Give this story to a different class and tell those students to read the story carefully and substitute (insert with a carat) meaningful words for the dashes. Display these stories on the board, next to the original story.

Linda Mikell
Oakdale, NY

CREATE A CONVERSATION

Foot and shoe, rug and floor, thunder and lightning, window and shade, baseball and mit, hat and hair, sun and moon. You can use word pairs like these to spark students' creative writing talents and to practice word processing. Here's how.

Have children help you generate a list of related words like the pairs above. Write the words on the board.

Now divide students into pairs. Have each pair of students choose a word pair. Students take turns composing a conversation between their two objects.

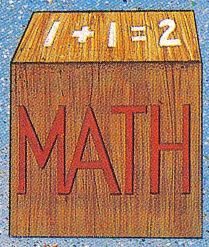
Tell them to write the conversation in a form similar to a play script. For example, here's a conversation between a shoe and a foot.

Shoe: "You have the life, Foot."
Foot: "What do you mean?"
Shoe: "You're nice and warm all the time."
Foot: "Warm! It's stuffy in here."

Encourage kids to punctuate all dialogue correctly.

Kids will come up with some pretty creative conversations. You may even want to have students perform them for the rest of the class.

Gary Robert Muschla
South River, NJ



COMPUTE POSTAGE COSTS

This BASIC program has students calculate postage costs for parcels of different weights.

When a student runs the program, the computer prints the current post office rates: 22 cents for up to one ounce and 17 cents for each additional ounce. Then it generates a random weight (from one to 12 ounces) for a parcel, and asks for the amount of postage needed to mail the parcel.

The user must use the post office rates to calculate the correct postage. (One way to get the answer is to multiply the weight by 17 cents and add five cents to the product.)

The child then types in a response and the program tells if he or she entered too little postage, too much postage, or the correct amount. If the answer is incorrect, the program asks the student to try again.

This listing is for use on any Apple computer. To run the program on Commodore 64 computers, change HOME in line 20 to PRINT CHR$(147).

To run it on Radio Shack computers, change HOME to CLS in line 20; change W = INT (12 * RND (1)) + 1 to W = RND (12) in line 60; and change RETURN to ENTER in line 110. Change line 70 to P = W * .17 + .0501.

```
10  REM  JUNIOR POSTMAN
20  HOME
30  PRINT "POSTAL RATES:"
40  PRINT : PRINT "$.22 FOR FIRST OUNCE."
50  PRINT "$.17 FOR EACH ADDITIONAL OUNCE."
60 W =  INT (12 *  RND (1)) + 1
70 P = W * .17 + .05
80 P =  INT (100 * P)
90  PRINT : PRINT "  THE ENVELOPE WEIGHS
    ";W;" OUNCES."
100  PRINT : PRINT "  HOW MUCH POSTAGE DO
    YOU NEED? (ENTER"
110  PRINT "THE COST AND PRESS <RETURN>.)
    ."
120  INPUT A:A =  INT (100 * A)
130  IF A < P THEN  PRINT : PRINT "  IN
    SUFFICIENT POSTAGE. TRY AGAIN.":
    GOTO 120
140  IF A > P THEN  PRINT : PRINT "  EX
    CESS POSTAGE. TRY AGAIN.": GOTO 120
150  PRINT : PRINT "  NICE JOB!!! WOULD
    YOU LIKE TO DO"
160  PRINT "ANOTHER ONE (Y/N)?"
170  INPUT Z$
180  IF Z$ = "Y" OR Z$ = "YES" THEN 10
190  IF Z$ <  > "N" THEN 170
200  PRINT : PRINT "  HAVE A NICE DAY...
    .": END
```

Richard Bollinger
New City, NY

MAKE SIMPLE BAR GRAPHS

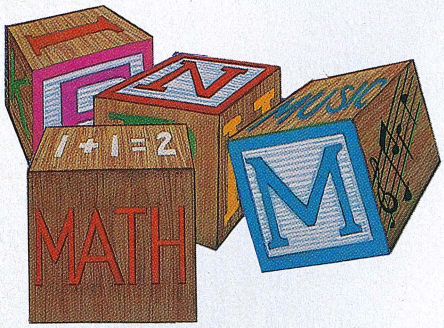
Graphs are great for helping students visualize math concepts. I use graphs to compare the heights of famous buildings, to illustrate the probability of random choices (such as the number of times a tossed coin will land on heads or tails), and to chart classroom polls on anything from favorite TV shows to favorite pizza toppings.

The following BASIC program uses data that students type into the computer to print horizontal bar graphs. The program asks students to type in the number of categories

(continued)

James Stagg

COMPUTING across the CURRICULUM



(up to nine) that they want their graph to contain. Then students type the title of each category (using less than 15 letters) and the number of items (up to 23) each category contains.

The program uses the students' data to produce a bar graph on the screen like the one below. It also gives students the option of printing their graphs on paper if the computer is attached to a printer.

The program uses the letter "X" to show the amount of items in each category. If they wish, kids can change the "X" in line 220 to another keyboard symbol, such as "$" for a graph about money.

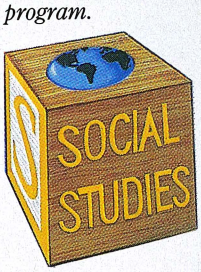
This listing is for use on any Apple computer.

```
10  REM KEYBOARD GRAPH MAKER
20  HOME : CLEAR
30  PRINT "  HELLO! WHAT'S YOUR NAME";:
    INPUT N$
40  PRINT : PRINT "  WHAT'S THE TITLE O
    F YOUR GRAPH";: INPUT T$
50  PRINT : PRINT "  HOW MANY CATEGORIE
    S (UP TO 9)";: INPUT NC
60  IF NC > 9 THEN  PRINT "  THAT'S TOO
    MANY.": GOTO 50
70  HOME
80  FOR Z = 1 TO NC
90  PRINT : PRINT "  ENTER THE TITLE OF
    CATEGORY ";Z;"."
100  INPUT ST$(Z)
110  IF  LEN (ST$(Z)) > 15 THEN  PRINT
    "  TITLES MUST BE LESS THAN 15 LET
    TERS.": GOTO 90
120  PRINT : PRINT "  ENTER THE AMOUNT
    (UP TO 23)"
130  INPUT AMT(Z): IF AMT(Z) > 23 THEN
     PRINT "  THE AMOUNT MUST BE LESS
    THAN 24.": GOTO 120
140  NEXT Z
150  HOME : PRINT  TAB( (40 -  LEN (T$)
    ) / 2);T$
160  PRINT : PRINT  TAB( (38 -  LEN (N$
    )) / 2);"BY ";N$
170  PRINT
180  FOR Z = 1 TO NC
190  PRINT ST$(Z),
200  FOR N = 1 TO AMT(Z)
210  IF AMT(Z) = 0 THEN  PRINT " ";:
    GOTO 230
220  PRINT "X";
230  NEXT N
240  PRINT : PRINT
250  NEXT Z
260  PR# 0: VTAB 23: PRINT "  PRESS <RE
    TURN> TO CONTINUE.": INPUT Z$
270  HOME : PRINT "  WHAT DO YOU WANT T
    O DO, ";N$;"?"
280  PRINT : PRINT " 1. MAKE A NEW GRAPH."
290  PRINT "  2. PRINT THE GRAPH ON PAP
    ER. (YOU"
300  PRINT "NEED A PRINTER ATTACHED TO
    YOUR COM-"
310  PRINT "PUTER TO DO THIS.)
320  PRINT "  3. END THE PROGRAM."
330  PRINT : PRINT "  ENTER 1, 2, OR 3
    AND PRESS <RETURN>."
340  INPUT P$
350  IF P$ = "1" THEN 10
360  IF P$ = "2" THEN  GOSUB 400: GOTO
    150
370  IF P$ <  > "3" THEN 340
380  PRINT "  GOODBYE, ";N$;"....": END
390  PR# 1: GOTO 150
400  REM  GET PRINTER READY
410  PRINT "  MAKE SURE YOUR PRINTER IS
     TURNED ON"
420  PRINT "THE PAPER IS IN PLACE."
430  PRINT "  PRESS <RETURN> TO PRINT T
    HE GRAPH."
440  INPUT Z$: PR# 1
450  RETURN
```

Richard Devir
Peekskill, NY

```
        BY MR. DEVIR'S CLASS
      FAVORITE PIZZA TOPPINGS

MUSHROOM          XXXXXX

PEPPERONI         XXXXXXXXXXX

MEATBALL          XXXXXXXXXXXXXXXXX

EXTRA CHEESE      XXXXXXXXX

ANCHOVY           XXX

OTHER OR NONE     XXXXXXXX
```

Sample graph made with Graph Maker *program.*



WRITE PRESIDENTIAL NEWS STORIES

You can make headlines with this social studies activity! Have each student choose a former president of the United States and write a news story about his election on the computer.

A program called *The Newsroom* (Springboard Software, 7807 Creekridge Circle, Minneapolis, MN 55435; 800/328-1223; $49.95) helps students create professional-looking newspaper pages complete with banners, clip art, and various type styles, on Apple II series, IBM PC, PCjr, and Commodore 64 computers. Students can also use a word processing program to write and edit their stories.

Tell students to include the following information in their articles: the date of the inauguration, the president's name, the number of electoral and popular votes he received, his opponents' names and political parties, the issues involved in the election, and a brief biography of the president.

Bring in some sample newspapers to illustrate how a news story is written. Tell students to include the most important information in the first paragraph (who, what, where, when, why, and how) and to list the rest of the information in order of importance.

Here is a sample lead for a news story written about President Lincoln's first election.

On March 4, 1861, Republican candidate Abraham Lincoln took the oath of office to become the sixteenth president of the United States. He received 180 electoral votes. Lincoln's chief opponent, former Vice-President John C. Breckinridge, a Democrat from the South, won only 72 electoral votes. Although Lincoln received more popular votes than any of the other candidates, more people voted against Lincoln than for him. The people gave him 1,865,593 votes compared to a combined total of 2,823,975 for his three opponents.

SET UP AN "OUR TOWN" DATA BASE

Have students investigate the history of your town. Consult the local Chamber of Commerce, local historical societies, and libraries for information about events, places, and people that shaped the development of your community.

Organize the information you gather in a data base. You can use any data base management software to create an OUR TOWN file.

There are many ways to set up your data base. You may want to

(continued on page 33)

MICRO TIMES™

The mini-magazine for kids who love computers.

Published by Scholastic Inc. September 1985

ROBOTS ON THE JOB

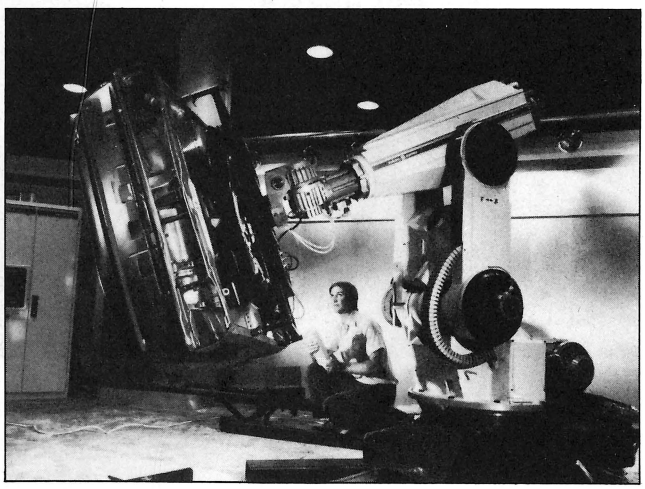
Robots are computers that have moving parts. They can be programmed to do many different jobs. They can work in factories, homes, schools, offices, and many other places.

They often do jobs that are very dull for humans to do. In fact, the word *robot* means "dull work" in the Czechoslovakian language.

Robots also do jobs that are very dangerous or that need great strength.

The pictures on the following two pages show five different robots at work on five different jobs. Why do you think robots, instead of humans, are doing these jobs?

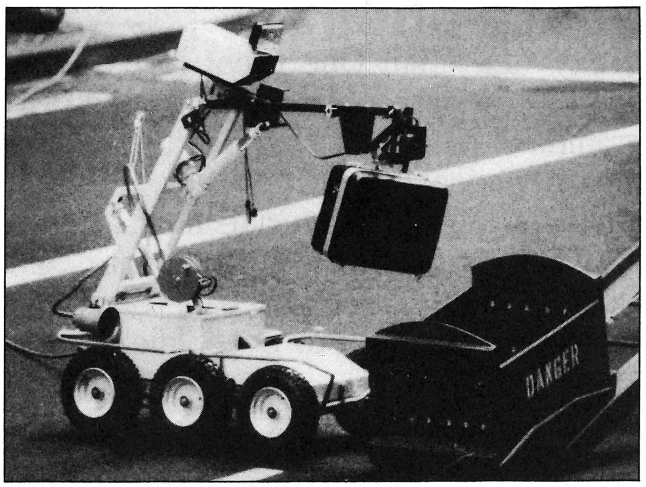
(continued)



General Electric

Factory Worker

Heave ho! This factory robot is super strong. It lifts cars all day without getting tired. Factory robots are by far the most common kind of robot.



UPI

Police Robot

You've found a bomb. Who you going to call? Police robot! This fearless robot is putting a bomb into a bomb-proof box.

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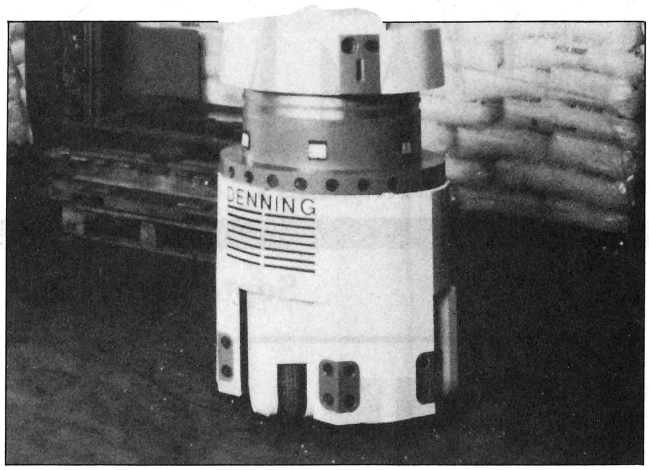
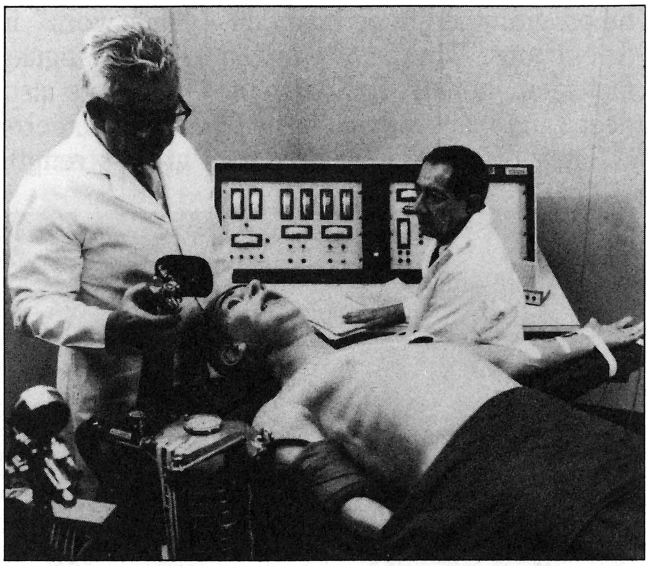
Written by Lorraine Hopping



(ROBOTS *continued*)

Prison Guard

Prisoners beware! Denning Sentry robot is on the job. Denning Sentry patrols prison hallways. If the robot spots a prisoner trying to escape, it sounds an alarm.



Test Patient

Say "ah!" Sim One robot helps teach people how to be doctors. It can be programmed to get "sick" just the way a human patient might get sick. Medical students must then decide how to cure it. They program their ideas into Sim One. If their ideas are bad, Sim One could get more sick or even "die."

Teachers' Aide

Turtle Tot robot is helping these kids learn about computer programming, math, and other subjects. In this case, the kids are programming it to make the different shapes they learned about in math class.

Program Listing

CORNY CORNSTALK

Farmers plant corn seeds in early spring. The seeds grow into cornstalks that are knee-high by the Fourth of July. By September the stalks are as high as an elephant's eye!

You can make cornstalks grow on the computer screen.

What to Do

1. Load Logo into your computer.

2. Type in the following RLEAF procedure.

```
TO RLEAF :S
  REPEAT 2 [RT 30 FD :S]
  RT 60 FD :S
  BK :S LT 60
  REPEAT 2 [BK :S LT 30]
END
```

3. Type RLEAF 15 and press RETURN or ENTER. The Logo turtle will draw a cornstalk leaf that looks like this:

Clear the screen.

4. Take a close look at the RLEAF procedure. Use the commands to make a procedure called LLEAF that draws a similar leaf to the left. (Hint: Change left to right and right to left in the RLEAF procedure.) The Logo turtle should draw a cornstalk leaf that looks like this:

Clear the screen.

5. Type RLEAF 15 and press RETURN or ENTER. Then type LLEAF 15 and press RETURN or ENTER. Your screen will look like this:

6. Here comes the fun part! You can make a cornstalk that has leaves growing one on top of the other. Here is a procedure to get you started.

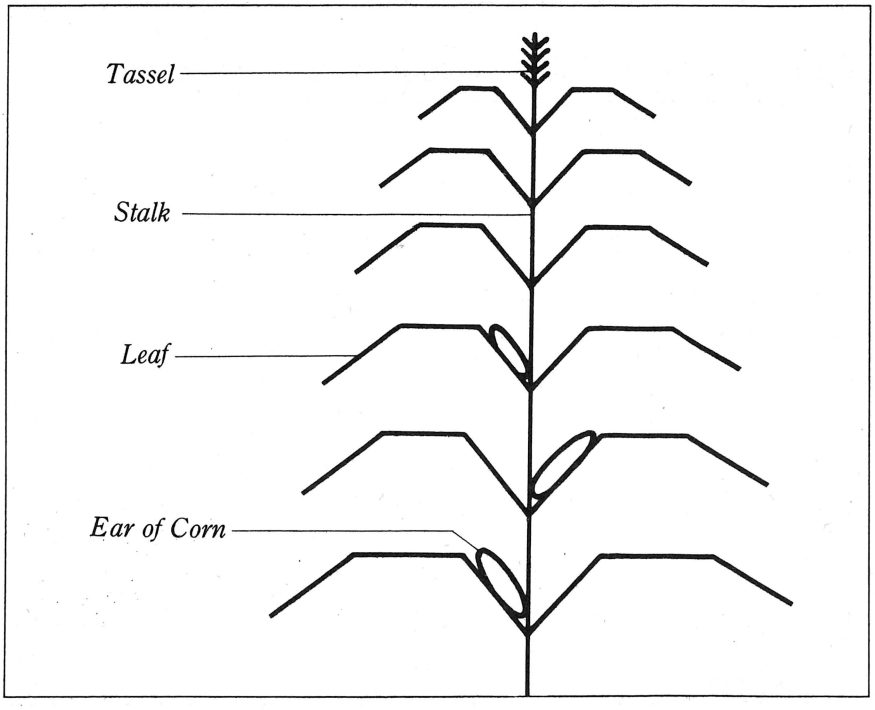
```
TO CORNSTALK
  RLEAF 15 LLEAF 15 FD 15
  RLEAF 13 LLEAF 13 FD 15
  RLEAF 11 LLEAF 11 FD 15
  RLEAF 9 LLEAF 9 FD 15
  RLEAF 7 LLEAF 7 FD 15
  RLEAF 5 LLEAF 5 FD 15
END
```

Cornstalk Challenges

How many of these Logo programming challenges can you do?

- Make the cornstalk grow higher.
- For a fancy touch, add a *tassel* to the top of your stalk. *(See illustration.)* A tassel is the flower part of the cornstalk.
- A cornstalk has from one to eight *ears* (spikes) of corn growing on it. The corn grows where the leaf meets the stalk. Add ears of corn to your cornstalk.
- Grow a whole field of corny corn on your computer screen! (Remember that corn is planted in straight rows.)

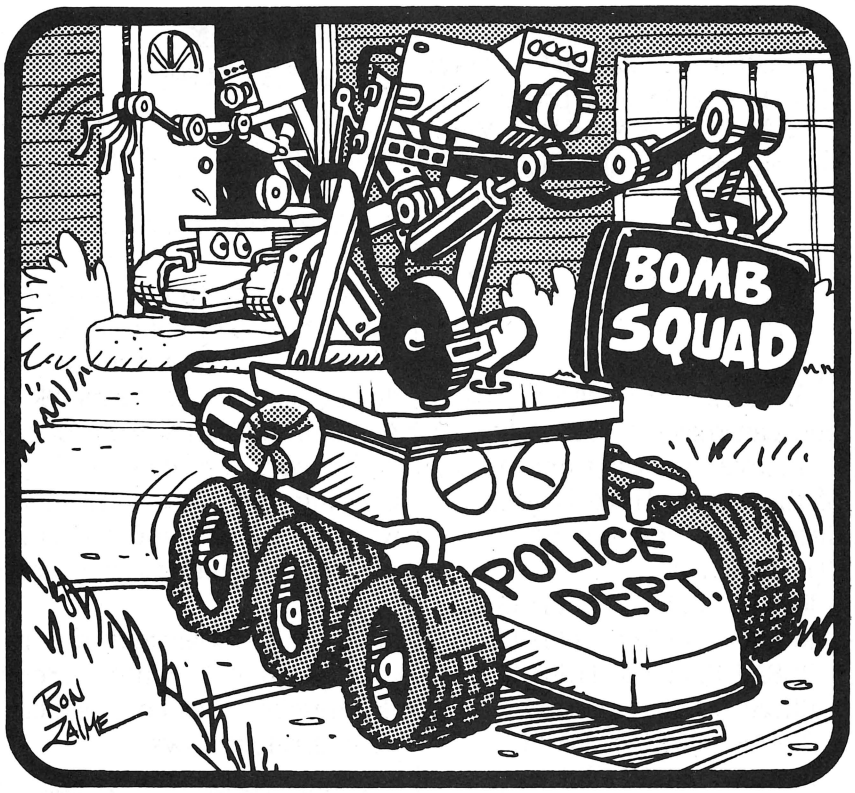
Answers to Cornstalk Challenges appear on page 50 of *Teaching and Computers* magazine.



A cornstalk has leaves, a stalk, ears of corn, and a tassel.

Computer Cartoons

Here is a cartoon about a robot on the job.



CAPTION: "Have a nice day at work, Dad!"

Draw your own robot cartoon in this space.

CAPTION: _____

Boris the Bragger

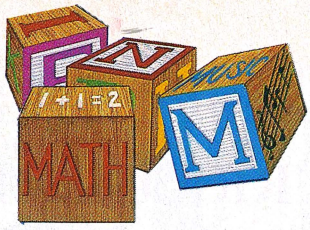
Boris the Bragger thinks he's the greatest person in the world. To prove it, he wrote a computer program that prints BORIS THE BRAGGER IS THE GREATEST PERSON IN THE WORLD!

Boris isn't *that* great, though. His program has a few bugs in it. Debug Boris's program. Then put *your* name in place of Boris's!

```
NEW
10 PRONT BORIS THE BRAGGER
IS THE
20 PRINT "THE WORLD!
30 PRIN "GREATEST PERSON IN"
30 QUIT
```

Answer: Your teacher has the answer to the Bug Buster. It is on page 50 of his or her copy of *Teaching and Computers* magazine.

COMPUTING across the CURRICULUM

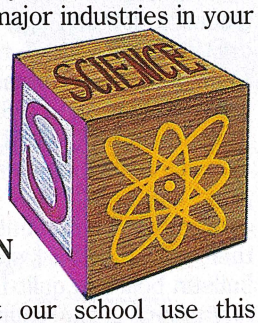


(continued from page 20)

organize the data according to specific events that happened in your town's history. In that case, each record should include an event's name, date, location, and significance. It should also include the names of the people involved.

If you gather most of the information for your data base from interviews with community members, you may prefer to set up a record for each individual interviewed. Each record should include the person's name, date of birth, occupation, and observations about the town.

After you finish your data base, see if kids can answer some of these questions: How did the Depression of the 1930s affect your community? Who are some of the people that helped shape your town's history? What are the major industries in your community?



IDENTIFY EVERGREEN TREES

Students at our school use this BASIC program to identify the evergreen trees in our area.

Each student finds an evergreen tree and breaks off a small sample to use with the program. The program asks students to select one of four descriptions that best matches the needles in their sample. According to the description students choose, the program either identifies the kind of evergreen tree they found or asks students to select one of three additional needle descriptions. For example, if the sample has long, thin, smooth needles, the program asks students to identify the number of needles (2, 3, or 5) in a cluster and their length. According to their response, the program identifies the tree as a red pine, pitch pine, or white pine. The program identifies six kinds of evergreens in all: hemlock, red pine, pitch pine, white pine, cedar, and spruce.

This program is for use on any Apple computer. To run the program on Atari computers, change HOME to PRINT CHR$(125) in lines 20 and 180, and change CLEAR to CLR in line 20.

To run it on Commodore 64 computers, change HOME to PRINT CHR$(147) in lines 20 and 180, and change CLEAR to CLR in line 20.

For Radio Shack computers, change HOME to CLS in lines 20 and 180, and change CLEAR to CLEAR 5000 in line 20. Also change PRESS RETURN in lines 80 and 320 to PRESS ENTER.

```
10  REM  EVERGREEN TREES
20  HOME : CLEAR
30  PRINT "  THIS PROGRAM WILL HELP YOU IDENTIFY"
40  PRINT "EVERGREEN TREES."
50  PRINT "  BREAK OFF A SMALL SAMPLE OF THE TREE"
60  PRINT "YOU WANT TO IDENTIFY. ENTER THE NUMBER"
70  PRINT "(1-4) OF THE DESCRIPTION THAT BEST"
80  PRINT "MATCHES YOUR TREE SAMPLE. PRESS RETURN."
90  PRINT : PRINT "  1. IT HAS SHORT, FLAT NEEDLES
    WITH"
100 PRINT "     WHITE UNDERSIDES."
110 PRINT "2. IT HAS LONG, THIN, SMOOTH NEEDLES. "
120 PRINT "3. IT HAS TIGHTLY CLUSTERED, PRICKLY, "
130 PRINT "     SCALE-LIKE NEEDLES."
140 PRINT "4. IT HAS SHORT, THICK, SHARP NEEDLES"
150 PRINT "     THAT CIRCLE THE TWIG."
160 INPUT A$
170 IF A$ < > "1" AND A$ < > "2" AND A$ < > "3"
    AND A$ < > "4" THEN 160
180 HOME :A = VAL (A$): ON A GOSUB 200,300,500,600
190 END
200 PRINT "  YOUR TREE IS A HEMLOCK. INDIANS USED"
210 PRINT "HEMLOCK TO MAKE TEA."
220 RETURN
300 PRINT "  ENTER THE NUMBER (1-3) OF THE"
310 PRINT "DESCRIPTION THAT BEST MATCHES YOUR"
320 PRINT "TREE SAMPLE. PRESS RETURN."
330 PRINT : PRINT "  1. IT HAS 2 NEEDLES IN A CLUS
    TER. THE"
340 PRINT "     NEEDLES ARE 6 INCHES LONG."
350 PRINT "2. IT HAS 3 NEEDLES IN A CLUSTER. THE"
360 PRINT "     NEEDLES ARE 3 TO 5 INCHES LONG."
370 PRINT "3. IT HAS 5 NEEDLES IN A CLUSTER. THE "
380 PRINT "     NEEDLES ARE 3 TO 5 INCHES LONG."
390 INPUT B$
400 IF B$ < > "1" AND B$ < > "2" AND B$ < > "3"
    THEN 390
410 IF B$ = "1" THEN  PRINT "  YOUR TREE IS A RED
    PINE."
420 IF B$ = "2" THEN  PRINT "  YOUR TREE IS A PITC
    H PINE."
430 IF B$ = "3" THEN  PRINT "  YOUR TREE IS A WHIT
    E PINE. 'WHITE'": PRINT "HAS FIVE LETTERS FOR
    FIVE NEEDLES."
440 RETURN
500 PRINT "  YOUR TREE IS A CEDAR. CEDAR SHAVINGS"
510 PRINT "MAKE GOOD HAMSTER BEDDING."
520 RETURN
600 PRINT "  YOUR TREE IS A SPRUCE. PEOPLE OFTEN"
610 PRINT "USE SPRUCE TREES AS CHRISTMAS TREES."
620 RETURN
```

The Talcott Mountain Science Center
Avon, CT

TAKE THE FAMOUS SCIENTIST QUIZ

The *Famous Scientist Quiz* is a BASIC program that drills students on facts about famous scientists.

When a student runs the program, a clue about a famous scientist appears on the screen, followed by the question, WHO AM I? If the student types an incorrect answer, another clue appears. If the student fails to identify the scientist after five clues, the answer appears on the screen.

The program contains clues for one scientist. Students can use information from science texts to add to the program clues that identify other scientists.

To do this, have each student choose a scientist and write five clues to describe the scientist in first-person narration. For example, the following two clues describe Thomas Edison in first-person narration:

"I am in my laboratory in New Jersey."

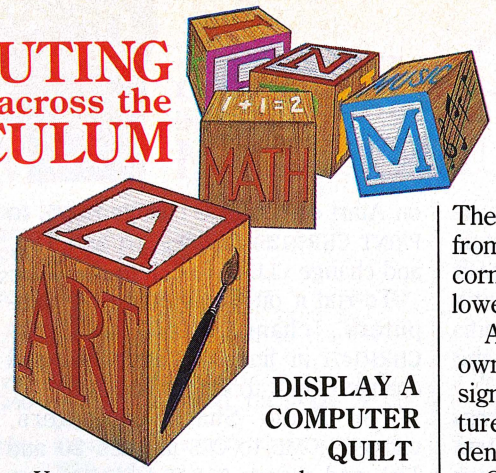
"It is 1879, and I am looking for a new use for electricity."

Beginning on line 1060, have each student type six DATA statements into the program. The first statement should contain the scientist's name. The next five statements should contain clues that describe the scientist. (Remember, every DATA statement starts with a line number and then includes, in this order: the word DATA, open quotation marks, the statement you wish to insert, and closing quotation marks.)

```
10  REM  FAMOUS SCIENTIST QUIZ
20  HOME : CLEAR :P = 1
30  READ A$
40  IF A$ = "END" THEN 200
50  FOR N = 1 TO 5: HOME : READ C$
60  PRINT "       *** CLUE #";N;" ***"
70  PRINT : PRINT : PRINT C$
80  PRINT : PRINT : PRINT "       WHO AM
    I?"
90  PRINT : PRINT : PRINT "ENTER THE FUL
    L NAME AND PRESS <RETURN>."
100 INPUT G$: IF G$ = A$ THEN 160
110 PRINT : PRINT "  THAT'S NOT WHO I A
    M. PRESS <RETURN>.": INPUT Z$
120 NEXT N
130 HOME : PRINT "  MY NAME IS ";A$;"."
140 PRINT : PRINT "  PRESS <RETURN> TO
    CONTINUE.": INPUT Z$
150 GOTO 30
160 HOME : PRINT "  YOU GOT IT! CONGRAT
    ULATIONS!":SC = SC + 1
170 IF N < 5 THEN  FOR M = N + 1 TO 5:
    READ C$: NEXT M
180 PRINT : PRINT "  PRESS <RETURN> TO
    CONTINUE.": INPUT Z$
190 GOTO 30
200 PRINT : PRINT "  YOU SCORED ";SC;"
    OUT OF ";P;"."
210 PRINT : PRINT "  WOULD YOU LIKE TO
    TRY AGAIN (Y/N)?"
220 INPUT Z$: IF Z$ < > "Y" AND Z$ < >
    "N" THEN 220
230 IF Z$ = "Y" THEN SC = 0: RESTORE :
    GOTO 30
240 PRINT : PRINT "  THAT'S ALL, FOLKS.
    ...": END
1000  DATA  "THOMAS EDISON"
1010  DATA  "I AM IN MY LABORATORY IN NE
    W JERSEY."
1020  DATA  "IT IS 1879. I AM LOOKING FO
    R A NEW USE  FOR ELECTRICITY."
1030  DATA  "I BELIEVE THERE IS A WAY TO
     MAKE LIGHT  FROM ELECTRICITY."
1040  DATA  "I INVENTED THE PHONOGRAPH O
    R 'SPEAKING  MACHINE.'"
```

(continued)

COMPUTING across the CURRICULUM



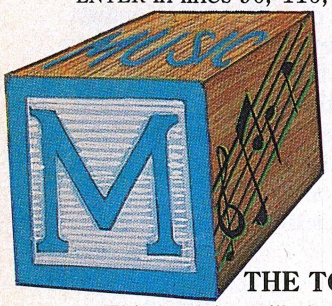

```
1050  DATA  "I WILL SOON WORK ON A CAMER
      A TO TAKE    MOVING PICTURES."
2000  DATA  "END"
```

Also, change P=1 in line 20 so that P equals the number of scientists you add.

When all of the students have typed in their clues, let them take the quiz and record their scores.

This program is for use on any Apple computer. To run it on Commodore 64 computers, change HOME to PRINT CHR$(147) in lines 20 and 50 and change CLEAR to CLR in line 20. For Radio Shack computers, change HOME to CLS in lines 20 and 50, and change CLEAR to CLEAR 5000 in line 20. Also change PRESS RETURN to PRESS ENTER in lines 90, 110, 140, and 180.

Michael Milone
Honesdale, PA



TUNE IN TO THE TOP TWENTY

This activity will sharpen your students' muscial ears by having them reproduce and guess tunes from different top 20 songs. You'll need a software program that allows you to play notes on your computer keyboard or a peripheral device that performs the same function. (Software programs that work with this activity include *Rock 'N' Rhythm,* by Spinnaker Software, *Songwriter,* by Scarborough Systems, and *Music,* by Lawrence Hall of Science.)

Begin by having students make a list of the top 20 radio songs for any given week. (Music magazines and radio stations are good sources for this information.)

Secretly assign each student a song from the list. Encourage kids to listen carefully to their tunes and then to figure out how to reproduce the first eight or so notes on the computer.

On performance day, each student takes a turn at the computer and plays a segment from his or her song. The other students in the class listen carefully and then try to guess which of the top 20 songs is being played.

DISPLAY A COMPUTER QUILT

Your students can make a cozy computer quilt like the one in the bulletin board below. You will need a printer and, depending upon your computer system, a printer interface and/or a software package that allows you to print Logo graphics.

First have each student use Logo to design a quilt block on the computer.

To help primary children and beginning Logo users with this, I enter and save these Logo procedures for drawing a square and a triangle.

```
TO SQUARE
  REPEAT 4 [RT 90 FD50]
END
TO TRIANGLE
  RT 45 FD 35 RT 90 FD 35
  RT 135 FD 50
END
```

Once the procedures have been entered and saved, I tell beginners to boot the Logo program. I then instruct them to move the turtle to the place on the screen where they want a square or a triangle to appear. Then they type either SQUARE or TRIANGLE. The turtle starts drawing the square from the square's upper left-hand corner; it starts the triangle from the lower left-hand corner.

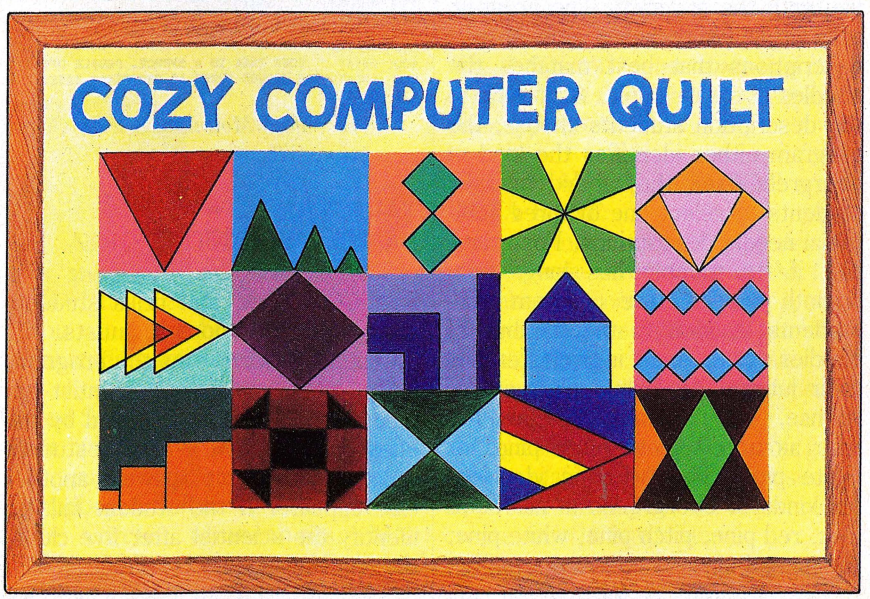
Advanced students can create their own procedures for quilt block designs. I usually bring quilts or pictures of quilts to class to give students design ideas.

Once students have created designs they like, I show them how to transfer their pictures from the screen to the printer. Instructions for this process depend on your computer, printer, and interface brands. (*The Logo Library,* a software program published by the Young People's Logo Association, provides Logo graphics printing procedures for Apple, Atari, IBM, and Commodore computers. It costs $29.95 and includes a list of Logo resources and utilities, and a cross-reference of 21 Logo versions. Contact YPLA Software Exchange, 1208 Hillsdale Dr., Richardson, TX 75081.)

Next I have students color their printed designs.

When all the students have colored their quilt blocks, I staple them to a bulletin board in quilt-fashion. *(See illustration.)* I use construction paper to label the board "Cozy Computer Quilt."

Dianne Lawrence
Warsaw, IN



A bulletin board made of students' Logo designs.

Meet The LOGO Turtle

Philip Scheuer

EASY-TO-MAKE TOOLS THAT TEACH CHILDREN HOW TO OPERATE THE LOGO TURTLE

BY EVELYN DALE AND LORRAINE HOPPING

Moving forward and backward, telling right from left, following directions, estimating distances, using degrees, and plotting points on a grid. These are skills that students learn by using the Logo language to program a cursor-like symbol, called a *turtle,* to move around the computer screen.

The teaching tools in this unit reinforce these skills while introducing students to Logo programming.

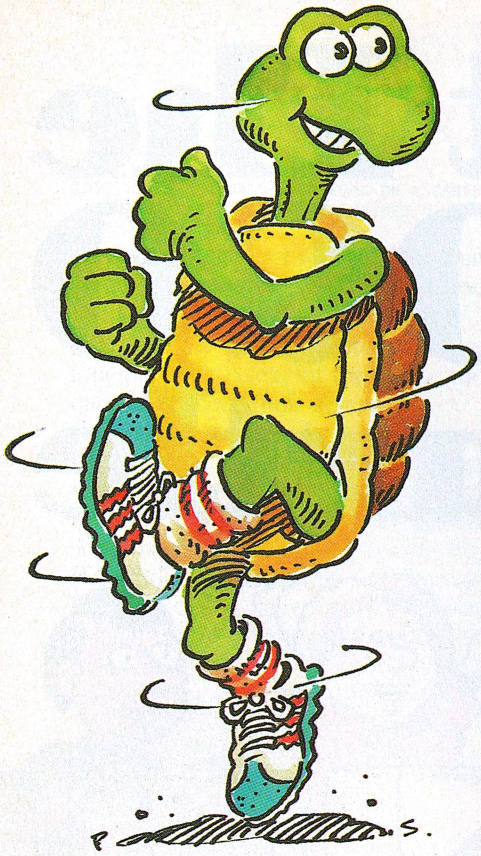
The unit includes patterns for making special "turtle turners" that help students position and move the Logo turtle on the screen, as well as directions for making a classroom-size floor grid. The floor grid, like the Logo screen, has numbered blocks that correspond to turtle steps. Students put themselves in the turtle's place by using turtle graphics commands to move about the grid.

The turtle turners and floor grid require no previous knowledge of Logo. Activities in the unit tell how students can use these tools to learn and practice the basic movement commands FORWARD, BACK, LEFT, and RIGHT. Other activities involve more sophisticated commands, such as SETH, SETX, and SETY.

Any version of Logo, including Instant Logo for nonreaders, is suitable for the activities. (Instant Logo changes turtle movement commands such as FD 15 into single keystroke commands. Pressing the "F" key, for example, makes the turtle go forward a set distance.)

(continued)

Turtle turners help point and turn the turtle



TURTLE TURNERS

Objectives: Turtle turners are cardboard compasses that have a movable "turtle" (triangle) in the center. *(See illustration.)* They help students point and turn the Logo turtle in desired directions.

Turtle Turner 1 (for beginnners) is helpful in demonstrating the turtle's right and left on a vertical plane. Sometimes this can be a confusing concept for children. For example, a turtle facing down turns to the turtle's right, but to the user's left.

Turtle Turner 2 (for more advanced Logo users) can help students estimate how many degrees right or left to turn the screen turtle so that it is pointing toward a specific location.

How to Make: Directions for making the turtle turners are simple enough for every student to make his or her own. Here are directions for making either kind.

1. Make one copy per student of the corresponding pattern on page 37.

2. Pass out to each students a pair of scissors, a brass fastener, crayons or magic markers, a piece of lightweight cardboard, and one turtle turner pattern.

3. Tell students to color their turtle turners and write their names in the blank provided on the triangle.

4. Instruct them to paste the turtle turner pattern onto their cardboard.

5. Then have kids cut out the triangle and circle shapes. (For longer-lasting turtle turners, laminate the circle and triangle parts at this point.)

6. Help students join the centers of the circle and triangle with a brass fastener.

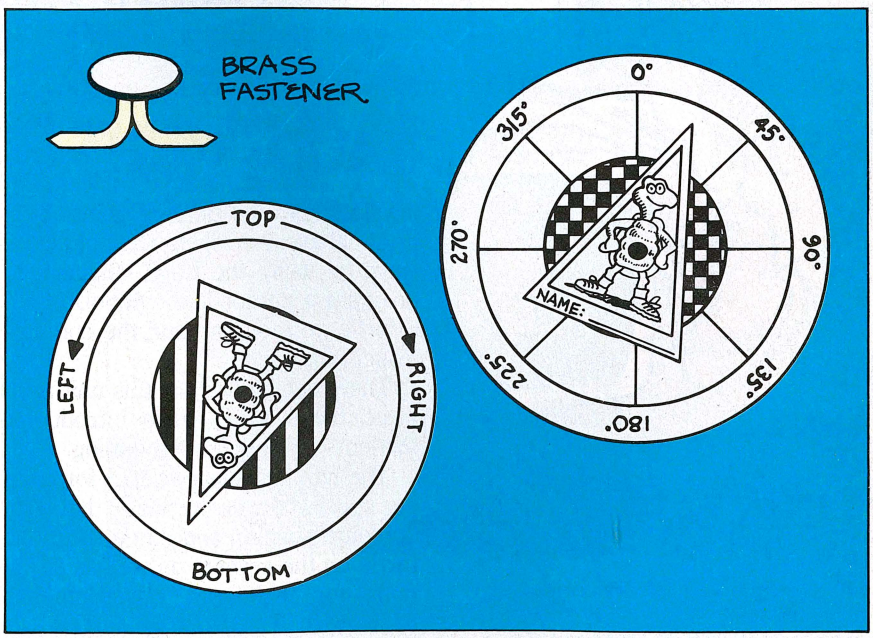
How to Use: To show students how to tell the turtle's right from its left, instruct them to hold Turtle Turner 1 next to the screen (top side up) and point the triangle in the same direction as the screen turtle is pointed. Kids should then slowly turn the triangle in the direction they want the screen turtle to go. The arrows on the triangle tell students whether to enter a left or a right command in order to point the screen turtle in the same direction as the turtle turner. For example, if the triangle is turning in the same direction as its right arrow, students know they must enter a RIGHT turn command to point the screen turtle in the proper direction. Instant Logo users would then press the "R" key. Standard Logo users would enter RIGHT or RT followed by the number of degrees to turn.

Turtle Turner 2 helps students using standard Logo to estimate degree increments. Tell students to hold the turtle turner next to the screen so that zero degrees is pointing straight up and the triangle is pointing in the same direction as the screen turtle.

Kids should then slowly turn the triangle either right or left so that it points to a spot where they want the screen turtle to go. Have them record two degree markers: the degrees at which the screen turtle is still pointing and the degrees to which they moved the triangle. To calculate how many degrees they have turned the triangle, tell students to subtract the smaller degree marker from the larger one. For example, if the triangle is pointing at 90 degrees and the screen turtle is pointing at 0 degrees, the triangle has traveled 90 degrees (90 – 0 = 90).

Students should then enter a RIGHT or a LEFT turn command followed by that number. For example, if they turned the triangle to the right 90 degrees, they would enter the command RIGHT 90 or RT 90.

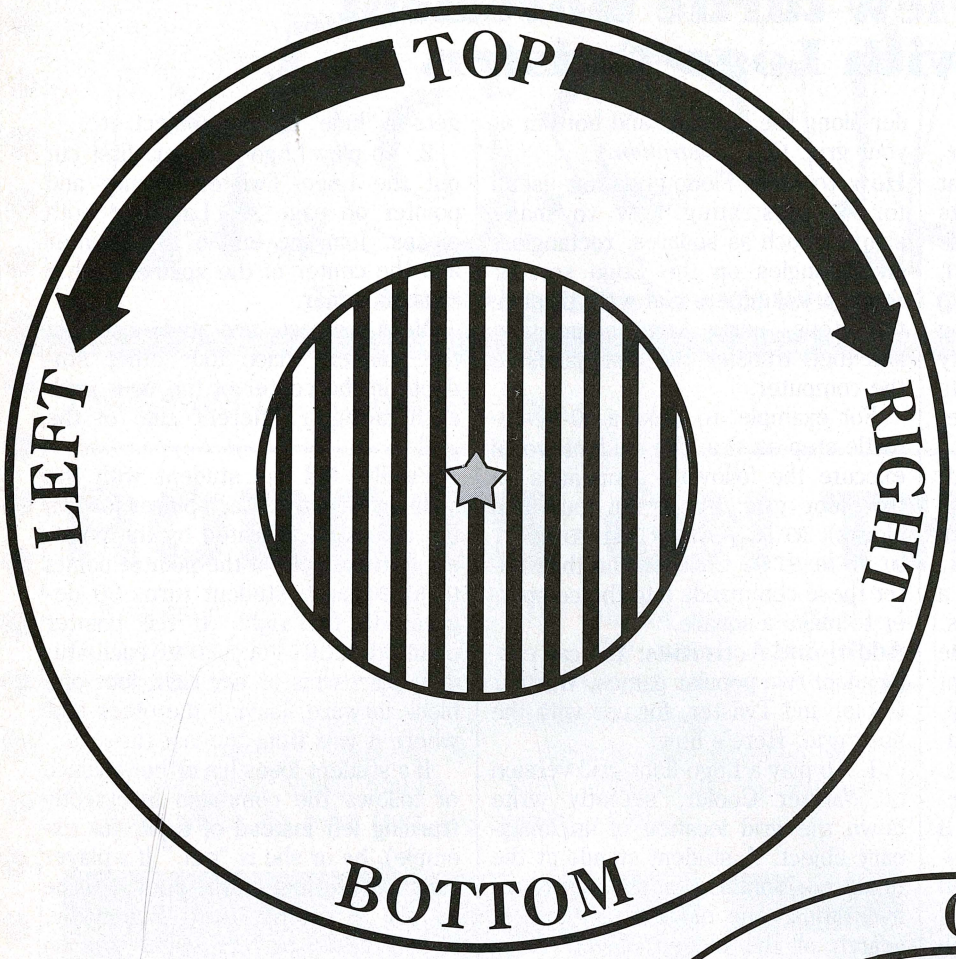
As students become more sophisticated Logo users, add 30, 60, 120, 150, 210, 240, 300, and 330 degree markers to Turtle Turner 2.

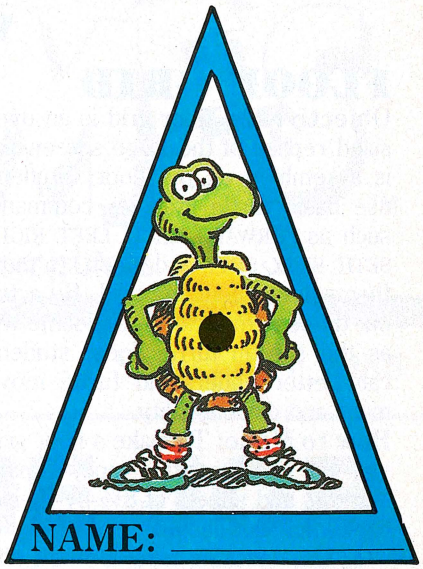


Above are assembled versions of Turtle Turner 1 (left) and Turtle Turner 2 (right).

CUT OUT AND COPY

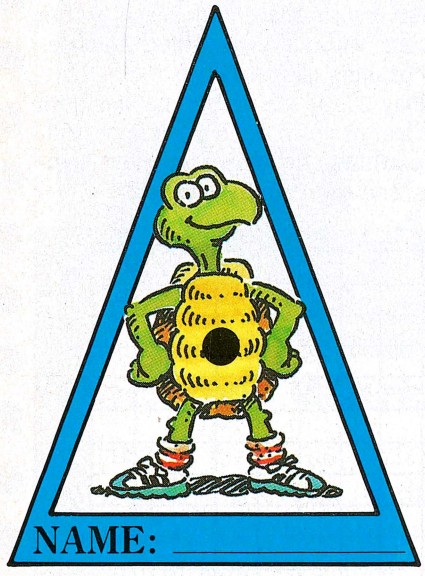
TURTLE TURNERS





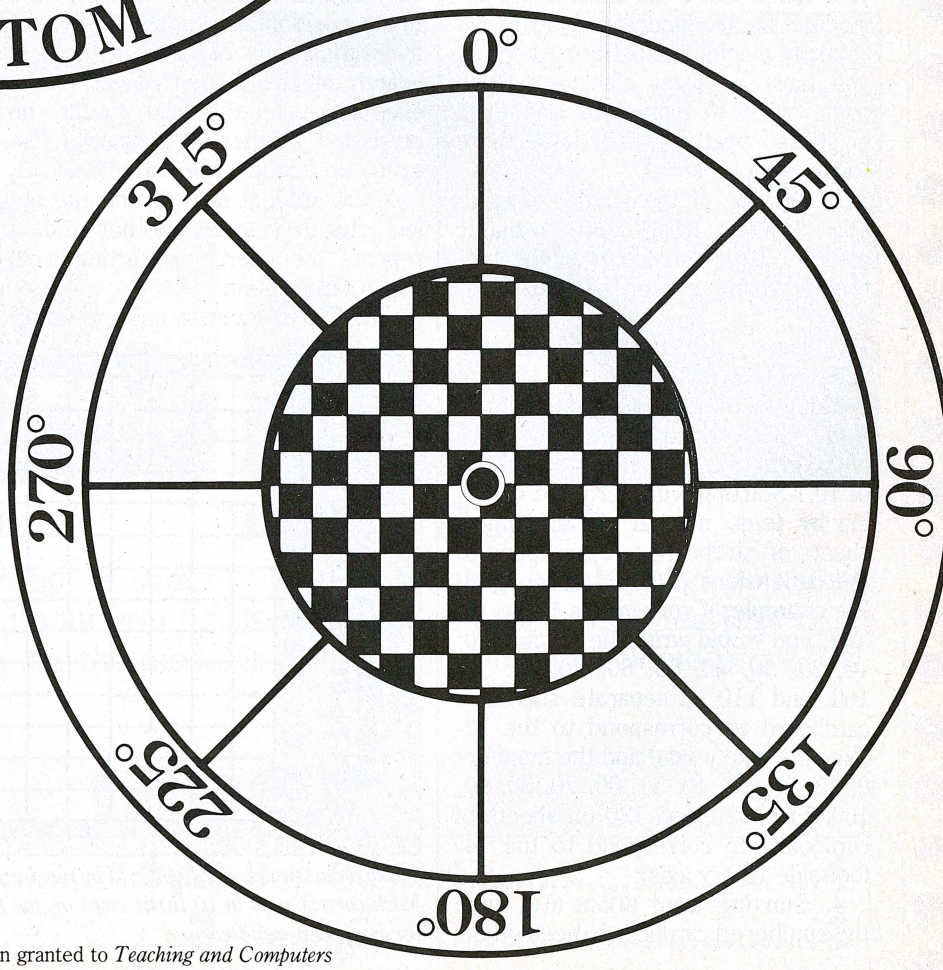
PATTERN FOR TURTLE TURNER 1

(Teaches turtle directionality to beginning Logo users.)



PATTERN FOR TURTLE TURNER 2

(Helps students estimate degrees for right and left turns.)



Directions for assembly are on page 36. Permission granted to *Teaching and Computers* subscribers to reproduce for classroom use. Copyright © 1985 by Scholastic Inc.

Review turtle movement with Logo Twister.

FLOOR GRID

Objectives: A floor grid is an oversized replica of the Logo screen that is assembled on the floor. Students use basic turtle graphics commands such as FORWARD, BACK, LEFT, RIGHT, SETH, SETX, SETY, and so on, to move themselves about the grid. By acting out these commands in the same way as the screen turtle does, students can better understand turtle movement and directionality.

How to Make: To make a floor grid, you will need masking tape, a magic marker, and sheets of 8½-by-11-inch lightweight cardboard.

1. Use masking tape to mark off a floor-size grid with 12-inch squares. Ideally, the grid should have the same dimensions as the first quadrant of your Logo screen. (For Apple, Krell, and Terrapin Logo, the measurements would be 12-by-14-feet. For Commodore Logo, the measurements would be 14-by-16-feet.) If your classroom is too small to accommodate these dimensions, mark off as many blocks as the floor allows. If you have a larger classroom, you might want to make the grid even bigger so that students have more room to move about.

2. On one of the sheets of cardboard, write HOME with a magic marker. Tape this sheet in the bottom left-hand corner of your floor grid.

3. Have each square of the grid represent 10 turtle steps. (If you are working with very young students, it might be easier to have each square of the grid represent one step instead of 10.) Starting with zero and counting by tens, number the remaining sheets of cardboard to correspond to the dimensions of your screen grid. For example, if your grid is 12-by-14-feet, you would write the numbers 0, 10, 20, 30, 40, 50, 60, 70, 80, 90, 100, and 110 on separate sheets of cardboard to correspond to the 12-foot side (the *y* axis) and the numbers 0, 10, 20, 30, 40, 50, 60, 70, 80, 90, 100, 110, 120, and 130 on sheets of cardboard to correspond to the 14-foot side (the *x* axis).

4. Starting from HOME (0,0), tape the numbered cardboard sheets in order along the left side and bottom of your grid. *(See illustration.)*

How to Use: Floor grids are useful for demonstrating how to make shapes, such as squares, rectangles, and triangles on the Logo screen. Student volunteers can walk through the steps, using Logo commands, and then transfer the commands to the computer.

For example, to make a 40-by-40-turtle-step square, the student would execute the following commands on the floor grid: FD 40 (or four grid blocks), RT 90, FD 40, RT 90, FD 40, RT 90, FD 40, RT 90. Children can then enter these commands into the computer to make a square.

Additional Activities: You can easily adapt two popular games, Warmer Cooler and Twister, for use with the floor grid. Here's how.

1. To play a Logo floor grid version of Warmer Cooler, secretly write down the grid location of an imaginary object. A student stands at the HOME position. He or she can move five times, one block at a time, in search of the hidden object. After each move, tell the child whether he or she is "warmer" or "cooler" (closer to or farther from the object).

If the student fails to find the object after five moves, another student repeats the exercise, starting from the HOME position.

The first student to find the object gets to "hide" the next object, etc.

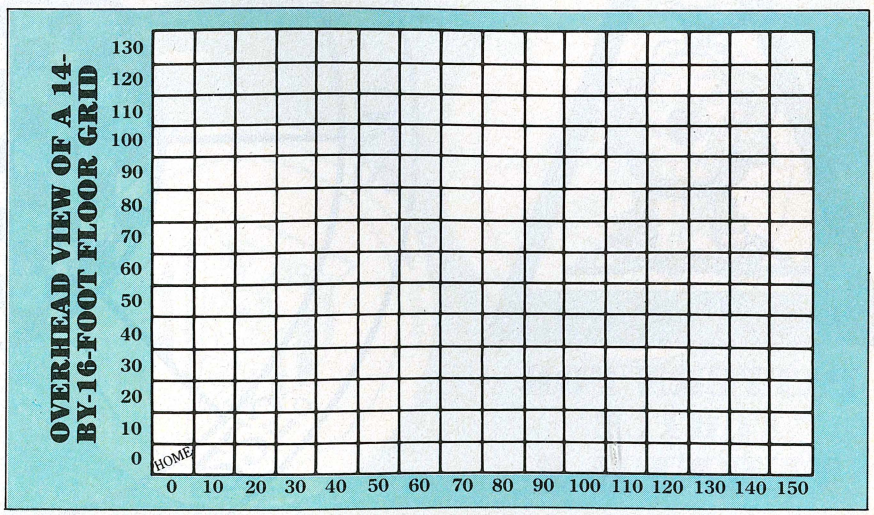
2. To play Logo Twister, first cut out the Logo Twister spinner and pointer on page 39. Laminate both pieces. Join the end of the pointer and the center of the spinner with a brass fastener.

Next designate one student to spin the spinner. Place four other students in the center of the floor grid, each facing a different side of the grid.

Finally, tell the student with the spinner to spin it. Each player follows the command indicated by the pointer. For example, if the pointer points to RT 90, each student turns 90 degrees to the right. If the pointer points to RIGHT FOOT FD 10, each student places his or her right foot one block forward, leaving the other foot where it was from the last turn.

If a student loses his or her balance or follows the command incorrectly (turning left instead of right, for example), he or she is "out." If a player runs out of room on the floor grid, he or she skips that turn. Eventually, two or more players might land on the same square. In this case, they must try to share the space in the square without losing their balance. No pushing allowed!

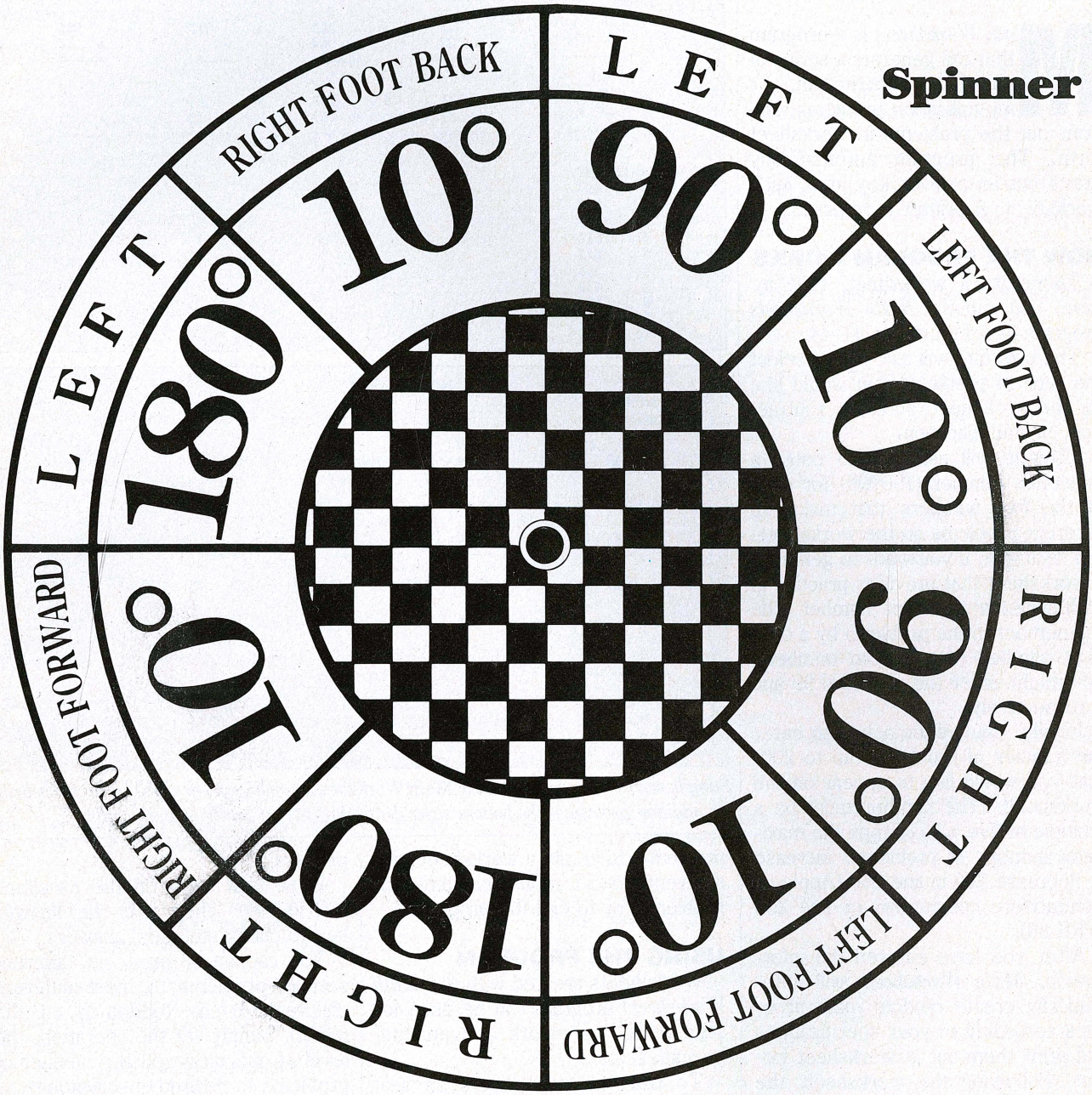
Play continues in this manner until the last player is left on the floor grid. The winner becomes the new spinner, and the game starts over.

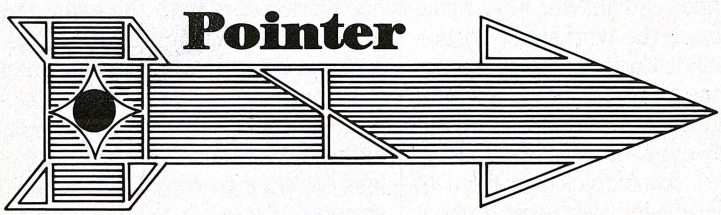


Make a classroom-size floor grid by marking off 12-inch squares with masking tape. Each block corresponds to 10 turtle steps on the Logo screen. HOME is placed at block 0,0 in the lower left-hand corner.

CUT OUT AND LAMINATE

SPINNER FOR LOGO TWISTER ACTIVITY





DIRECTIONS: (1) Cut out the circular spinner and the pointer. (2) Laminate both pieces. (3) Use a brass fastener to join the end of the pointer (marked with a dot) to the center of the spinner.

Math Worksheets

BY LORRAINE HOPPING

Math Worksheets is a program that can generate a series of addition, subtraction, or multiplication problems, and print out the problems in worksheet form. The program automatically prints out an answer key after each worksheet. A printer is required.

HOW THE PROGRAM WORKS

To create a worksheet, type in, save, and run the *Math Worksheets* program listed on pages 41–44.

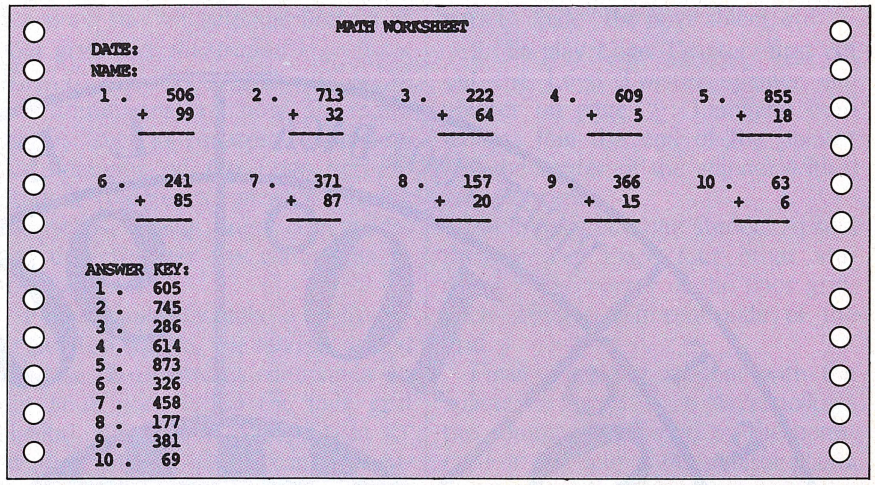
The program will ask you to select the type of problems you would like for the worksheet: addition, subtraction, or multiplication.

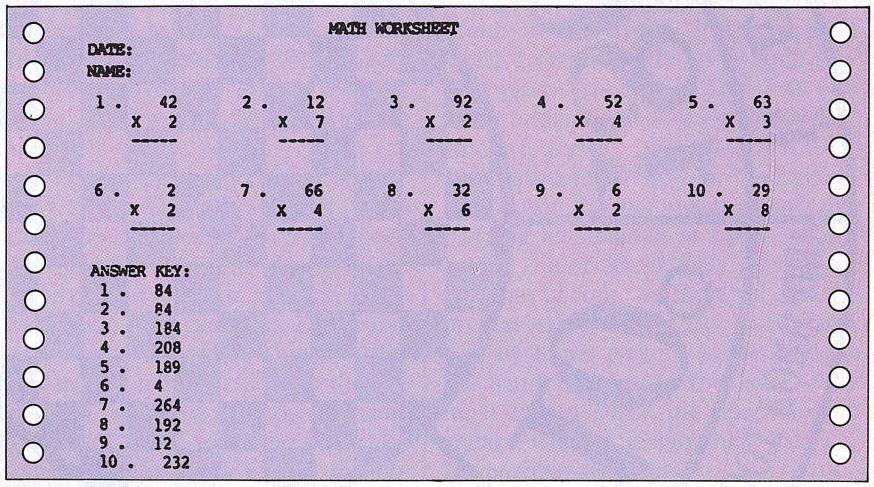
Then it will ask you to enter a maximum number (1–9999) for each of the two numbers that make up different problems on the worksheet. For example, if you want to generate a worksheet that provides practice in multiplying a two-digit number (the top number in the problem) by a one-digit number (the bottom number), you might enter the numbers 99 and 9 respectively.

Finally, you will be asked to enter the number of problems (up to 200) that you would like to appear on the worksheet. (The number must be a multiple of five.) To change the maximum number of problems, increase or decrease 200 in line 250 (Apple or Commodore computers) or line 230 (TRS-80).

After you have entered the information, *Math Worksheets* will automatically create random math problems according to your specifications and print them out in worksheet format. Following the worksheet, the program will print out an answer key. (In the Commodore version, the program pauses so that you can advance the paper to a new sheet before printing the answer key. In the Apple and TRS-80 versions, the program skips a few lines before printing the answer key.)

You can then choose to print out additional copies of the same worksheet, to create a worksheet with the same specifications but with different problems, to create a worksheet with different specifications and different problems, or to end the program.





Sample worksheets made with the Math Worksheets *program. The top sheet provides drill on addition problems; the bottom sheet drills students on multiplication skills.*

USING THE PROGRAM

Worksheets created with the *Math Worksheets* program can be used for seat work, homework assignments, or math tests.

To use the worksheets as seat work or homework, print out a master worksheet and answer key. Make a photocopy of the worksheet portion for each child. (You can also use option 1 of the program menu to print out additional copies of the worksheet. However, if you are making more than a few copies and need to cut off the answer key each time, it may be easier to make photocopies. Also, it may be faster to make photocopies due to the slow speed of most printers.)

Have kids work on the problems individually. Then use the answer key to check students' answers.

You can easily print out different sets of problems to meet different children's needs (option 3 on the menu). Simply set the operation, the level of difficulty, and the number of problems to desired specifications.

When test time rolls around, print out worksheets with the same specifications but with different sets of problems (option 2 on the menu). Pass out the worksheets so that students sitting near each other receive different versions. That way, kids are less tempted to copy their neighbors' answers.

Lorraine Hopping is associate editor for *Teaching and Computers*.

APPLE PROGRAM LISTING FOR *MATH WORKSHEETS*

This program listing is for use on Apple computers. Separate program listings are provided for TRS-80 Model III computers on page 43 and for Commodore 64 computers on page 42.

Teach/Comp. 9/85

```
10  REM MATH WORKSHEET GENERATOR @1985 SCHOLASTIC INC.
20  HOME : CLEAR
30  PRINT " WELCOME TO MATH WORKSHEET GENERATOR!"
40  PRINT : PRINT "  THIS PROGRAM GENERATES PRINTED"
50  PRINT "WORKSHEETS FOR PRACTICE IN ADDITION,"
60  PRINT "SUBTRACTION, OR MULTIPLICATION."
70  PRINT : PRINT "  A PRINTER IS REQUIRED."
80  REM ENTER SPECIFICATIONS
90  PRINT : PRINT "  WHAT OPERATION WOULD YOU LIKE?"
100  PRINT : PRINT "  1. ADDITION."
110  PRINT "  2. SUBTRACTION."
120  PRINT "  3. MULTIPLICATION."
130  PRINT : PRINT "  ENTER THE NUMBER OF YOUR CHOICE
     AND"
140  PRINT "PRESS <RETURN>."
150  INPUT OP$: IF OP$ <  > "1" AND OP$ <  > "2" AND O
     P$ <  > "3" THEN 150
160  PRINT : PRINT "  ENTER THE MAXIMUM VALUE OF THE F
     IRST"
170  PRINT "NUMBER. (IT MUST BE LESS THAN 10,000.)"
180  INPUT V1: IF V1 > 9999 THEN  PRINT "  ENTER A SMA
     LLER NUMBER.": GOTO 180
190 V$ =  STR$ (V1):V =  LEN (V$)
200  PRINT : PRINT "  ENTER THE MAXIMUM VALUE OF THE S
     ECOND"
210  PRINT "NUMBER. (IT MUST BE LESS THAN ";V1 + 1;".)
     "
220  INPUT V2: IF V2 > V1 THEN  PRINT "  ENTER A SMALL
     ER NUMBER.": GOTO 220
230  PRINT : PRINT "  HOW MANY PROBLEMS WOULD YOU LIKE
     ?"
240  PRINT "(ENTER A MULTIPLE OF 5 UP TO 200.)
250  INPUT N: IF N > 200 THEN  PRINT "  ENTER A SMALLE
     R NUMBER.": GOTO 250
260 N$ =  STR$ (N): IF N / 5 <  >  INT (N / 5) THEN
     PRINT "  ENTER A MULTIPLE OF 5.": GOTO 250
270  PRINT : PRINT "  ONE MOMENT, PLEASE...."
280  DIM N1(N),N2(N),N1$(N),N2$(N),A(N),SP$(N)
290  REM    PICK NUMBERS AT RANDOM
300  FOR X = 1 TO N
310 N1(X) =  INT (V1 *  RND (1)) + 1
320 N2(X) =  INT (V2 *  RND (1)) + 1
330  IF N2(X) > N1(X) THEN 320
340  GOSUB 1000: REM  EVEN OUT SPACING
350  REM  CALCULATE ANSWERS
360  IF OP$ = "1" THEN A(X) = N1(X) + N2(X)
370  IF OP$ = "2" THEN A(X) = N1(X) - N2(X)
380  IF OP$ = "3" THEN A(X) = N1(X) * N2(X)
390  NEXT X
400  REM    CONFIGURE WORKSHEET
410  IF OP$ = "1" THEN S$ = "   +"
420  IF OP$ = "2" THEN S$ = "   -"
430  IF OP$ = "3" THEN S$ = "   X"
440 L$ = "   "
450  FOR U = 1 TO V + 2
460 L$ = L$ +  CHR$ (45)
470  NEXT U
480  REM  GET PRINTER READY
490  HOME : PRINT "  MAKE SURE YOUR PRINTER IS TURNED
     ON"
500  PRINT "AND THE PAPER IS IN PLACE."
510  PRINT : PRINT "  PRESS <RETURN> TO PRINT OUT THE"
520  PRINT "WORKSHEET AND ANSWER KEY."
530  PRINT : PRINT "  PRESS CTRL-C TO INTERRUPT PRINTI
     NG."
540  PRINT "(YOU WILL THEN HAVE TO RE-RUN THE"
550  PRINT "PROGRAM AND START OVER.)": INPUT Z$
560  REM   PRINT OUT WORKSHEET AND ANSWER KEY
570  PR# 1
580  PRINT : PRINT : PRINT "
          MATH WORKSHEET"
590  PRINT : PRINT : PRINT "DATE:_____________________
     ______"
600  PRINT : PRINT "NAME:_____________________________
     _____"
610  PRINT : PRINT : PRINT
620  FOR X = 1 TO N STEP 5: REM FIVE PROBLEMS PER ROW
630  PRINT X;".";SP$(X);N1$(X),
640  PRINT X + 1;".";SP$(X + 1);N1$(X + 1),
650  PRINT X + 2;".";SP$(X + 2);N1$(X + 2),
660  PRINT X + 3;".";SP$(X + 3);N1$(X + 3),
670  PRINT X + 4;".";SP$(X + 4);N1$(X + 4)
680  PRINT S$;N2$(X),S$;N2$(X + 1),S$;N2$(X + 2),S$;N2
     $(X + 3),S$;N2$(X + 4)
690  PRINT L$,L$,L$,L$,L$
700  FOR Y = 1 TO 8: PRINT : NEXT Y
710  NEXT X
715  PR# 0: PRINT "  POSITION PAPER FOR ANSWER KEY. PR
     ESS ": PRINT "<RETURN>.": INPUT Z$: PR# 1
720  PRINT : PRINT : PRINT "ANSWER KEY:"
730  FOR X = 1 TO N
740  PRINT X;". ";A(X)
750  NEXT X
760  PR# 0
770  HOME : PRINT "  WHAT WOULD YOU LIKE TO DO NOW?"
780  PRINT : PRINT "  1. PRINT OUT ANOTHER COPY OF THE
      SAME"
790  PRINT "WORKSHEET."
800  PRINT : PRINT "  2. MAKE A NEW WORKSHEET WITH THE
      SAME"
810  PRINT "SPECIFICATIONS."
820  PRINT : PRINT "  3. MAKE A NEW WORKSHEET WITH"
830  PRINT "DIFFERENT SPECIFICATIONS."
840  PRINT : PRINT "  4. END THE PROGRAM."
850  PRINT : PRINT "  ENTER THE NUMBER OF YOUR CHOICE
     AND"
860  PRINT "PRESS <RETURN>."
870  INPUT CH$
880  IF CH$ = "1" THEN 480
890  IF CH$ = "2" THEN 290
900  IF CH$ = "3" THEN  CLEAR : GOTO 90
910  IF CH$ <  > "4" THEN 870
920  PRINT "  GOODBYE....": END
1000  REM  EVEN OUT SPACING
1010 N1$(X) =  STR$ (N1(X))
1020 N2$(X) =  STR$ (N2(X))
1030 L1 =  LEN (N1$(X))
1040 L2 =  LEN (N2$(X))
1050  FOR Y = L1 TO V
1060 N1$(X) =  CHR$ (32) + N1$(X)
1070  NEXT Y
1080  FOR Z = L2 TO V
1090 N2$(X) =  CHR$ (32) + N2$(X)
1100  NEXT Z
1110  IF X > 100 THEN SP$(X) = ""
1120  IF X >  = 10 AND X < 100 THEN SP$(X) = " "
1130  IF X < 10 THEN SP$(X) = "  "
1140  RETURN
```

COMMODORE 64 PROGRAM LISTING FOR *MATH WORKSHEETS*

This program listing is for Commodore 64 computers. Separate program listings are provided for Apple computers on page 41 and for TRS-80 Model III computers on page 43.

```
10 REM MATH WORKSHEET GENERATOR @1985 SCHOLASTIC INC.
20 PRINT CHR$(147):CLR
30 PRINT" WELCOME TO MATH WORKSHEET GENERATOR!"
40 PRINT:PRINT "   THIS PROGRAM GENERATES PRINTED"
50 PRINT "WORKSHEETS FOR PRACTICE IN ADDITION,"
60 PRINT "SUBTRACTION, OR MULTIPLICATION."
70 PRINT: PRINT "   A PRINTER IS REQUIRED."
80 REM ENTER SPECIFICATIONS
90 PRINT: PRINT"   WHAT OPERATION WOULD YOU LIKE?"
100 PRINT: PRINT"  1. ADDITION"
110 PRINT"  2. SUBTRACTION."
120 PRINT"  3. MULTIPLICATION"
130 PRINT: PRINT"   ENTER THE NUMBER OF YOUR CHOICE AND"
140 PRINT "PRESS <RETURN>."
150 INPUT OP$:IF OP$<>"1" AND OP$<>"2" AND OP$<>"3" THEN 150
160 PRINT: PRINT"   ENTER THE MAXIMUM VALUE OF THE FIRST"
170 PRINT"NUMBER. (IT MUST BE LESS THAN 10,000.)"
180 INPUT V1: IF V1>9999 THEN PRINT"   ENTER A SMALLER NUMBER.":GOTO 180
190 V$=STR$(V1):V=LEN(V$)
200 PRINT: PRINT"  ENTER THE MAXIMUM VALUE OF THE SECOND"
210 PRINT"NUMBER. (IT MUST BE LESS THAN ";V1+1;".)"
220 INPUT V2:IF V2>V1 THEN PRINT"  ENTER A SMALLER NUMBER.":GOTO 220
230 PRINT: PRINT"   HOW MANY PROBLEMS WOULD YOU LIKE?"
240 PRINT "(ENTER A MULTIPLE OF 4 UP TO 200.)
250 INPUT N:IF N>200 THEN PRINT "  ENTER A SMALLER NUMBER.":GOTO 250
260 N$=STR$(N): IF N/5<>INT(N/5) THEN PRINT"  ENTER A MULTIPLE OF
    5.":GOTO 250
270 PRINT: PRINT "ONE MOMENT, PLEASE....."
280 DIM N1(N),N2(N),N1$(N),N2$(N),A(N),SP$(N)
290 REM PICK NUMBERS AT RANDOM
300 FOR X= 1 TO N
310 N1(X)=INT(V1*RND(1))+1
320 N2(X)=INT(V2*RND(1))+1
330 IF N2(X)>N1(X) THEN 320
340 GOSUB 1000: REM EVEN OUT SPACING
350 REM CALCULATE ANSWERS
360 IF OP$="1" THEN A(X)=N1(X)+N2(X)
370 IF OP$="2" THEN A(X)=N1(X)-N2(X)
380 IF OP$="3" THEN A(X)=N1(X)*N2(X)
390 NEXT X
400 REM    CONFIGURE WORKSHEET
410 IF OP$="1" THEN S$="   +"
420 IF OP$="2" THEN S$="   -"
430 IF OP$="3" THEN S$="   X"
440 L$="   "
450 FOR U=1 TO V+2
460 L$=L$ + CHR$(45)
470 NEXT U
480 REM  GET PRINTER READY
490 PRINT CHR$(147):PRINT "  MAKE SURE YOUR PRINTER IS TURNED ON"
500 PRINT "AND THE PAPER IS IN PLACE."
510 PRINT: PRINT "  PRESS <RETURN> TO PRINT OUT THE"
520 PRINT "WORKSHEET AND ANSWER KEY."
530 PRINT:PRINT "PRESS <RUN/STOP> AND <RESTORE>"
535 PRINT "TO INTERRUPT PRINTING."
540 PRINT "(YOU WILL THEN HAVE TO RE-RUN THE"
550 PRINT "PROGRAM AND START OVER.)": INPUT Z$
560 REM   PRINT OUT WORKSHEET AND ANSWER KEY
570 OPEN 1,4: CMD 1
580 PRINT :PRINT: PRINT "                          MATH WORKSHEET"
589 REM USE <C=> AND <@> TO GET THE UNDERLINE CHARACTER IN
    LINES 590 AND 600.
590 PRINT: PRINT: PRINT "DATE:_____"
600 PRINT: PRINT: PRINT "NAME:_____"
610 PRINT: PRINT: PRINT
615 S=0: REM INITIALIZE COUNTER
620 FOR X = 1 TO N STEP 5: REM FIVE PROBLEMS PER ROW
630 GOSUB 3000: PRINT X$;".";SP$(X);N1$(X);TAB(5);
640 GOSUB 3000: PRINT X$;".";SP$(X + 1);N1$(X + 1);TAB(5);
650 GOSUB 3000: PRINT X$;".";SP$(X + 2);N1$(X + 2);TAB(5);
660 GOSUB 3000: PRINT X$;".";SP$(X + 3);N1$(X + 3);TAB(5);
670 GOSUB 3000: PRINT X$;".";SP$(X + 4);N1$(X + 4)
680 PRINT S$;N2$(X);TAB(5);
681 PRINT S$;N2$(X + 1);TAB(5);
682 PRINT S$;N2$(X + 2);TAB(5);
683 PRINT S$;N2$(X + 3);TAB(5);
684 PRINT S$;N2$(X + 4)
690 FOR L= 1 TO 5:PRINT L$;TAB(5);:NEXT L
700 FOR Y= 1 TO 8: PRINT: NEXT Y
710 NEXT X'
712 PRINT#1," ":CLOSE1
715 PRINT"POSITION YOUR PAPER THEN PRESS <RETURN>"
716 INPUT Z$
718 OPEN 1,4:CMD 1
720 PRINT: PRINT: PRINT "ANSWER KEY:"
730 FOR X= 1 TO N: IF X<10 THEN PRINT " ";
740 PRINT X;". ";A(X)
750 NEXT X
760 PRINT#1 : CLOSE1
770 PRINT CHR$(147): PRINT "WHAT WOULD YOU LIKE TO DO NOW?"
780 PRINT: PRINT " 1. PRINT OUT ANOTHER COPY OF THE SAME"
790 PRINT "WORKSHEET."
800 PRINT: PRINT " 2. MAKE A NEW WORKSHEET WITH THE SAME"
810 PRINT "SPECIFICATIONS."
820 PRINT: PRINT " 3. MAKE A NEW WORKSHEET WITH"
830 PRINT "DIFFERENT SPECIFICATIONS."
840 PRINT: PRINT " 4. END THE PROGRAM."
850 PRINT: PRINT " ENTER THE NUMBER OF YOUR CHOICE AND"
860 PRINT "PRESS <RETURN>."
870 INPUT CH$
880 IF CH$="1" THEN 480
890 IF CH$="2" THEN 290
900 IF CH$="3" THEN CLR: GOTO 90
910 IF CH$<>"4" THEN 870
920 PRINT "  GOODBYE....":END
1000 REM EVEN OUT SPACING
1010 N1$(X) = STR$(N1(X))
1020 N2$(X) = STR$(N2(X))
1030 L1 = LEN(N1$(X))-1
1040 L2 = LEN(N2$(X))-1
1044 N1$(X)=RIGHT$(N1$(X),L1)
1046 N2$(X)=RIGHT$(N2$(X),L2)
1050 FOR Y = L1 TO V
1060 N1$(X)= CHR$(32) + N1$(X)
1070 NEXT Y
1080 FOR Z = L2 TO V
1090 N2$(X)= CHR$(32) + N2$(X)
1100 NEXT Z
1110 IF X>=100 THEN SP$(X)="": REM NO SPACE BETWEEN QUOTES
1120 IF X>=10 AND X<100 THEN SP$(X)=" ": REM ONE SPACE  BETWEEN QUOTES
1130 IF X<10 THEN SP$(X)="  ": REM TWO SPACES BETWEEN QUOTES
1140 RETURN
3000 REM STRIP OFF LEADING BLANK
3010 S=S+1
3020 X$=STR$(S):LX=LEN(X$)-1:X$=RIGHT$(X$,LX)
3030 RETURN
```

TRS-80 MODEL III PROGRAM LISTING FOR *MATH WORKSHEETS*

This program listing is for TRS-80 Model III computers. Separate program listings are provided for Apple computers on page 42 and for Commodore 64 computers on page 41.

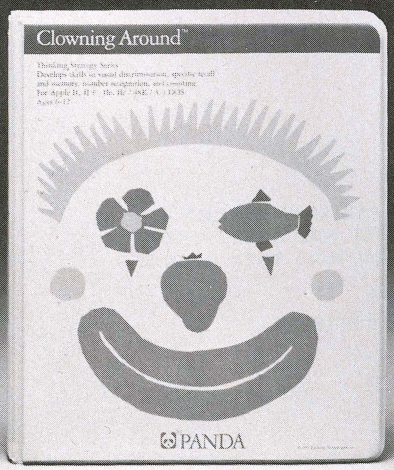
```
10 REM MATH WORKSHEET GENERATOR @1985 SCHOLASTIC INC.
20 CLS:CLEAR 5000
30 PRINT "  WELCOME TO MATH WORKSHEET GENERATOR!"
40 PRINT:PRINT "  THIS PROGRAM GENERATES PRINTED WORKSHEETS FOR PRACTICE IN"
50 PRINT "ADDITION, SUBTRACTION, OR MULTIPLICATION."
60 PRINT:PRINT "  A PRINTER IS REQUIRED."
70 REM ENTER SPECIFICATIONS
80 PRINT:PRINT "  WHAT OPERATION WOULD YOU LIKE?"
90 PRINT:PRINT "  1. ADDITION."
100 PRINT "  2. SUBTRACTION."
110 PRINT "  3. MULTIPLICATION."
120 PRINT:PRINT "  TYPE THE NUMBER OF YOUR CHOICE AND PRESS <ENTER>."
130 INPUT OP$:IF OP$<>"1" AND OP$<>"2" AND OP$<>"3" THEN 130
140 PRINT:PRINT "  ENTER THE MAXIMUM VALUE OF THE FIRST NUMBER. (IT MUST BE"
150 PRINT "LESS THAN 10,000)."
160 INPUT V1:IF V1>9999 THEN PRINT "  ENTER A SMALLER NUMBER.":GOTO 160
170 V$=STR$(V1):V=LEN(V$)
180 PRINT:PRINT "  ENTER THE MAXIMUM VALUE OF THE SECOND NUMBER. (IT MUST BE"
190 PRINT "LESS THAN ";V1+1;".)"
200 INPUT V2:IF V2>V1 THEN PRINT "  ENTER A SMALLER NUMBER.":GOTO 200
210 PRINT:PRINT "  HOW MANY PROBLEMS WOULD YOU LIKE? (ENTER A MULTIPLE OF 5"
220 PRINT "UP TO 200.)"
230 INPUT N:IF N>200 THEN PRINT "  ENTER A SMALLER NUMBER.":GOTO 230
240 N$=STR$(N):IF N/5<>INT(N/5)  THEN PRINT "  THE NUMBER MUST BE A MULTIPLE OF 5.":GOTO 230
250 PRINT:PRINT "  ONE MOMENT, PLEASE...."
260 DIM N1(N),N2(N),A(N),N1$(N),N2$(N),SP$(N)
270 REM PICK NUMBERS AT RANDOM
280 FOR X=1 TO N
290 N1(X)=RND(V1)
300 N2(X)=RND(V2)
310 IF N2(X)>N1(X) THEN 300
320 GOSUB 1000 :REM EVEN OUT SPACING
330 REM CALCULATE ANSWERS
340 IF OP$="1" THEN A(X)=N1(X)+N2(X)
350 IF OP$="2" THEN A(X)=N1(X)-N2(X)
360 IF OP$="3" THEN A(X)=N1(X)*N2(X)
370 NEXT X
380 REM CONFIGURE WORKSHEET
390 IF OP$="1" THEN S$="     +"
400 IF OP$="2" THEN S$="     -"
410 IF OP$="3" THEN S$="     X"
420 L$="     "
430 FOR U=1 TO V+2
440 L$=L$+CHR$(45)
450 NEXT U
460 REM GET PRINTER READY
470 CLS:PRINT "  MAKE SURE YOUR PRINTER IS ON AND THE PAPER IS IN PLACE."
480 PRINT:PRINT "  PRESS <ENTER> TO PRINT OUT THE WORKSHEET AND ANSWER KEY."
490 PRINT:PRINT "  PRESS <BREAK> TO INTERRUPT PRINTING. (YOU WILL THEN HAVE TO"
500 PRINT "RERUN THE PROGRAM AND START OVER.)":INPUT Z$
510 REM PRINT OUT WORKSHEET AND ANSWER KEY
520 LPRINT:LPRINT:LPRINT "                              MATH WORKSHEET"
530 LPRINT:LPRINT:LPRINT "DATE:"
540 LPRINT:LPRINT "NAME:"
550 LPRINT:LPRINT:LPRINT
560 FOR X=1 TO N STEP 5:REM FIVE PROBLEMS PER ROW
570 LPRINT X;".";SP$(X);N1$(X),
580 LPRINT X+1;".";SP$(X+1);N1$(X+1),
590 LPRINT X+2;".";SP$(X+2);N1$(X+2),
600 LPRINT X+3;".";SP$(X+3);N1$(X+3),
610 LPRINT X+4;".";SP$(X+4);N1$(X+4)
620 LPRINT S$;N2$(X),S$;N2$(X+1),S$;N2$(X+2),S$;N2$(X+3),S$;N2$(X+4)
630 LPRINT L$,L$,L$,L$,L$
640 FOR Y=1 TO 6:LPRINT:NEXT Y
650 NEXT X
655 PRINT "  POSITION PAPER FOR ANSWER KEY. PRESS <ENTER>.":INPUT Z$
660 LPRINT:LPRINT "ANSWER KEY:"
670 FOR X=1 TO N
680 LPRINT X;".  ";A(X)
690 NEXT X
700 CLS:PRINT "  WHAT WOULD YOU LIKE TO DO?"
```

(continued)

(continued from page 43)

```
710 PRINT "  1. PRINT OUT ANOTHER COPY."
720 PRINT "  2. MAKE A NEW WORKSHEET WITH THE SAME SPECIFICATIONS."
730 PRINT "  3. MAKE A NEW WORKSHEET WITH DIFFERENT SPECIFICATIONS."
740 PRINT "  4. END THE PROGRAM."
750 PRINT:PRINT "  TYPE THE NUMBER OF YOUR CHOICE AND PRESS <ENTER>."
760 INPUT CH$
770 IF CH$="1" THEN 470
780 IF CH$="2" THEN 270
790 IF CH$="3" THEN CLEAR 5000:CLS:GOTO 80
800 IF CH$<>"4" THEN 760
810 PRINT "  GOODBYE....":END
1000 REM EVEN OUT SPACING
1010 N1$(X)=STR$(N1(X))
1020 N2$(X)=STR$(N2(X))
1030 L1=LEN(N1$(X))
1040 L2=LEN(N2$(X))
1050 FOR Y=L1 TO V
1060 N1$(X)=CHR$(32)+N1$(X)
1070 NEXT Y
1080 FOR Z=L2 TO V
1090 N2$(X)=CHR$(32)+N2$(X)
1100 NEXT Z
1110 IF X>100 THEN SP$(X)=""
1120 IF X>=10 AND X<100 THEN SP$(X)=" "
1130 IF X<10 THEN SP$(X)="  "
1140 RETURN
```


Class Clown.



He gets a lot of laughs. But he gets a lot accomplished. With his help and the help of our software library for Apple and Commodore computers, learners of all ages are having a great time learning math, problem solving and pre-reading skills. To receive our complete catalog or to find the dealer nearest you, call toll free 800-238-4277. In Texas, call 214-991-4958. Or write Learning Technologies, 4255 LBJ Freeway, Suite 131, Dallas, Texas 75244.

LearningTechnologies™

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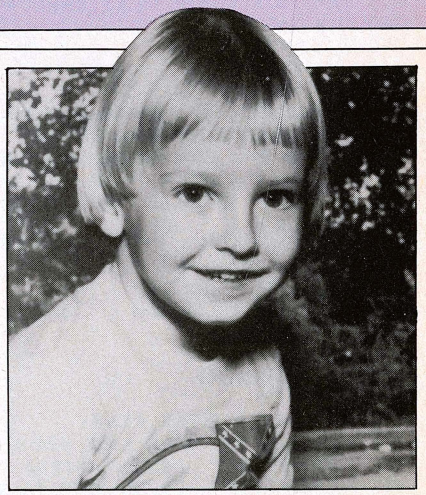


HAVE YOU SEEN THIS CHILD?

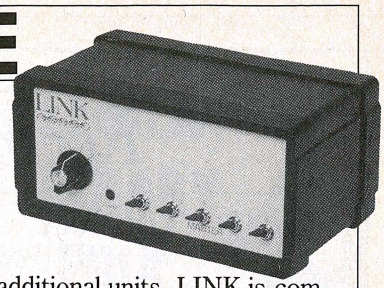
David Christopher Cook
Born: May 22, 1978
Missing From: Conway, MO
Missing Since: June 26, 1981
Eyes: Blue
Hair: Blonde
Other Identifying Features: Scars on forehead and chin.

If you have information on the whereabouts of David, or if you suspect another child of being a victim of abduction, please contact: CHILD FIND, INC., 800/426- 5678, PO Box 277, New Paltz, NY 12561. All information will be handled in strict confidence.

Circle 12 on Reader Service Card.

TOOLS OF THE TRADE

NEW AND USEFUL COMPUTER PRODUCTS



PRECOMPUTER FOR PRESCHOOLERS

Preschoolers can learn about spelling, counting, music, colors, and shapes with the help of a talking, computer-like device called Dial-A-Teacher.

To use Dial-A-Teacher, a child clips a Course Card onto its touch-activated 8-by-10-inch keyboard area and enters the numbers listed on the card into a special keypad installed on the right-hand side of the unit. Through a speaker, the child hears a question. Depending on the question, the child answers by touching a picture on the Course Card or by using the Dvorak keyboard on the Course Card to type out a word. If the child answers the question correctly, he or she is asked another question. If the answer is wrong, the child is encouraged to try again.

The complete Dial-A-Teacher package comes with five double-sided Course Cards. Additional Course Cards are available in packages of five.

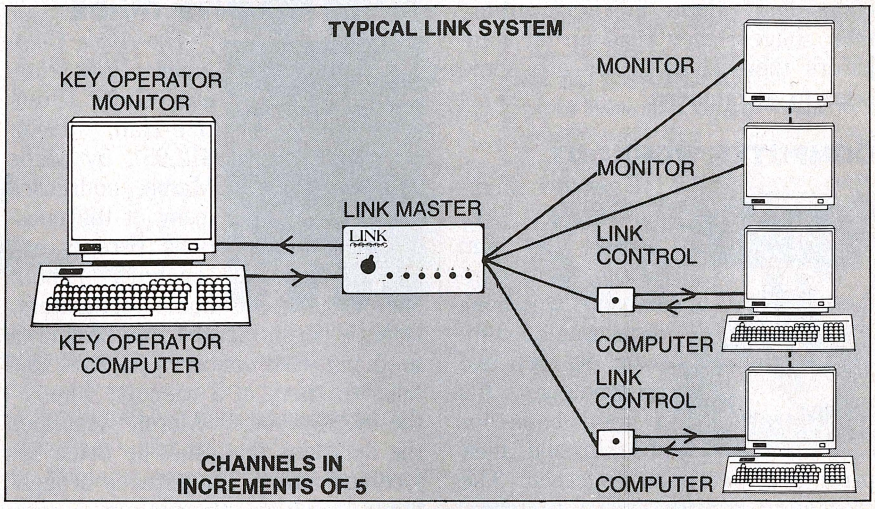
Price: *$40 for unit and 10 Course Cards.* Contact: *V-Tech, 2633 Greenleaf Ave., Elk Grove Village, IL 60007; 312/640-1776.*
(Circle 1 on Reader Service Card.)

VIDEO NETWORKING DEVICE

The LINK Master Standard unit is a video networking device that lets a computer lab teacher view an individual student's screen or transmit an identical display to every monitor in the lab. An upgraded Special Switch unit allows teachers to communicate with each monitor individually.

Each unit connects five monitors. An unlimited number of monitors can be connected to the system by installing additional units. LINK is compatible with any computer that uses a detached video device.

Price: *$1,095 for Standard unit; $1,249.50 for Special Switch.* Contact: *Applied Computer Systems, PO Box 146, New Albany, OH 43054; 800/237-LINK. In OH, 614/855-1007.(Circle 4 on Reader Service Card.)*



LOGO LEARNING KITS

Turtle Trek Challenge Kits encourage students to explore Logo independently. Two kits are available: one that introduces Logo to primary graders and one that offers more advanced activities to upper graders.

Each kit contains 50 Challenge Cards that define Logo commands and then invite kids to use them in various procedures. Also included are 13 Teach Cards that students can refer to if they need help completing the Challenge Cards and six reproducible sheets that teachers can use to record and award children's progress.

The kits use MIT (Apple and Commodore 64) Logo commands, but conversions are listed on the cards for LSCI (Apple, IBM, and Atari) Logo.

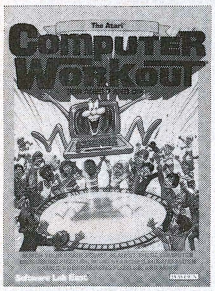
Price: *$24.95.* Contact: *EduComp Publications, 14242 Wyeth Ave., Irvine, CA 92714; 714/551-4073.*
(Circle 2 on Reader Service Card.)

Recommendations for Parents

BY CANDY COLBORN

You may not think of yourself as a computer expert, but as far as many parents are concerned, teachers have become authorities on the subject. Parents look to you for advice on what computers to buy and what to do with them once they are installed in the home. If you don't feel confident counseling others in these areas, then suggest they read up on computers themselves. Here are some titles to recommend.

COMPUTER WORKOUT

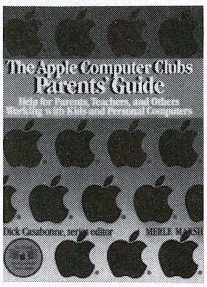


Computer Workout (Hayden; 1985; $2.95), by Jim Keogh, is a consumable workbook of puzzles on computer literacy and programming. It's a good book for children and their parents to work on together. The crossword puzzles, word searches, and matching games will interest anyone from age seven on up. Especially valuable are the "Solve It" quizzes that present incomplete programs to finish. Answers are supplied in the back of the book, allowing users to check their work. Machine-specific editions are available for Apple, Atari, Commodore, and IBM computers.

MEET THE COMPUTER & HOW TO TALK TO YOUR COMPUTER

Meet the Computer and *How to Talk to Your Computer* (Thomas Y. Crowell; 1985; $11.50 each), by Seymour Simon, are part of the Let's-Read-and-Find-Out science series for children ages five through nine. The colorful illustrations and bold text will delight and inform young readers and their parents. Both books use innovative, easy-to-understand analogies to explain complicated computer terms and programming concepts. The first book in the series, *Meet the Computer,* explains computer terms such as *data, input,* and RAM and ROM. The second book, *How to Talk to Your Computer,* introduces children to simple BASIC commands and the Logo turtle.

THE APPLE COMPUTER CLUBS PARENTS' GUIDE

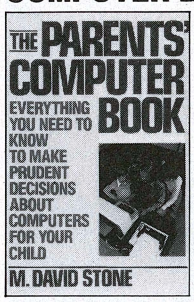


The Apple Computer Clubs Parents' Guide (Prentice-Hall, 1984; $12.95), by Merle Marsh, addresses many of the questions parents ask teachers about home computers. Being a parent herself, Marsh knows firsthand what concerns parents, and talks to them in a friendly, I-know-the-feeling voice. Marsh describes the decisions that must be made before and after a computer is brought home, such as choosing a specific computer model and selecting software to use with it. As a curriculum director for a secondary school, Marsh is sympathetic to the computer dilemmas schools face (like scheduling computer time equally and finding funds for software purchases) and explains them to parents. She describes some innovative solutions teachers are using to overcome these obstacles. The book is an excellent guide for enthusiastic but computer-intimidated parents.

MORE FROM YOUR MICRO

For families who already have a computer and some general knowledge about how to operate it, but who are looking for inexpensive ways to explore its great possibilities, suggest *More From Your Micro* (Avon Books; 1985; $2.50), by Charles Platt. There is very little philosophy here, just ready-to-type BASIC programs that demonstrate some of the computer's abilities. The compact paperback contains 15 program listings, including a typing tutorial, a simple data base, and several games. The book lists conversions for 12 popular computers including Apple, Commodore, IBM, and Radio Shack.

THE PARENTS' COMPUTER BOOK



In *The Parents' Computer Book* (Macmillan; 1984; $16.95), M. David Stone covers much of the same information presented in *The Apple Computer Clubs Parents' Guide* but in greater detail. Chapters on computer languages explain BASIC, Logo, and Pascal, and discuss the controversy over whether a child should learn programming. Some added features that make the book a valuable resource include an index, a glossary, and hardware and software buying guides. Stone is also a parent, but he uses a more scholarly and technical approach than Marsh. Parents completing Stone's book will develop some expectations of what their children should be learning with and about computers, and will likely become allies to their schools' computer programs.

PUBLISHERS' ADDRESSES

Avon Books, 1790 Broadway, New York, NY 10019.
Thomas Y. Crowell, 10 E. 53rd St., New York, NY 10022.
Hayden Book Co., 10 Mulholland Dr., Hasbrouck Heights, NJ 07604.
Macmillan Publishing Co., 866 Third Ave., New York, NY 10022.
Prentice-Hall, Englewood Cliffs, NJ 07632.■

Candy Colborn is a media specialist at Cottonwood Creek Elementary School in Englewood, Colorado.

SOFTWARE SHOWCASE

SOFTWARE RECOMMENDED FOR TEACHERS, BY TEACHERS

Sample newspapers created with The Newsroom, *a program that helps students design, produce, and print their own professional quality newspapers on the computer.*

THE NEWSROOM

Computer: Apple II series, IBM PC, Commodore 64 (available soon)
Topic: Language arts
Grade Level: 5–adult

The Newsroom lets your students produce a professional-looking newspaper on the computer. The program features a word processor that lets kids write text in five different fonts and a library of more than 600 pieces of clip art that students can combine or modify with a keyboard, joystick, or Koala Pad to illustrate their newspaper. Students can also use the program's graphic tools to create their own original pictures.

Once they have text and art for an entire newspaper page, students can arrange it all into a newspaper-page format on the screen. This page can be printed out on a dot matrix printer.

If you have a modem, children can use it to send and receive text and pictures created with *The Newsroom.*

The manual is a complete guide to creating newspapers. It provides a description of the program, tips for producing a good newspaper, a glossary of newspaper terms, an annotated bibliography, a chart of proofreader's symbols, and pictures of the program's clip art.

Students must be willing to devote time to learning to use the program. They also must constantly switch between four data disks. Because *The Newsroom* takes a lot of time to set up and use, it is probably more appropriate for use in after-school clubs than in average classrooms.

I've cut and pasted classroom newspapers together for years. Regular word processing programs help the process, but *The Newsroom*'s additional features make publishing a breeze. My students thoroughly enjoy it.

Price: $49.95
Policy: $12 backup; 30-day money-back guarantee.
Additional Info: *The Clip Art Collection Volume 1* contains 600 additional pieces of clip art to use with *The Newsroom.* It costs $29.95 and is available for Apple and IBM computers.
Source: Springboard Software, 7807 Creekridge Circle, Minneapolis, MN 55345; 612/944-3912.

Ann Dana, Microcomputer Consultant
Distict 181, Hinsdale, IL

(continued)

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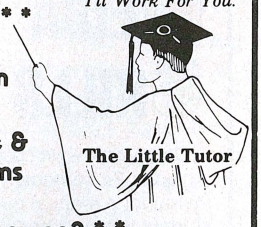

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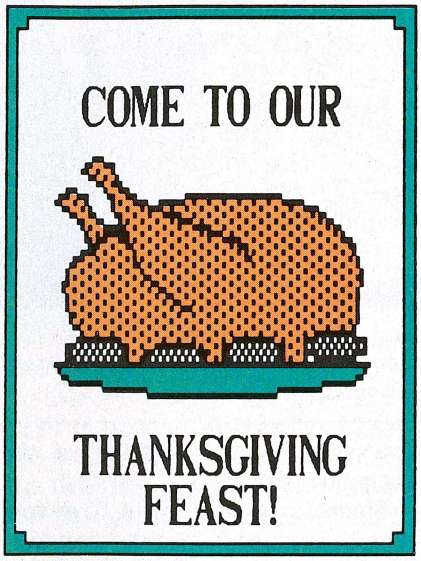
SOFTWARE SHOWCASE

(continued from page 47)

PRINT SHOP

Computer: Apple II series; Commodore 64; Atari (48K); IBM PC, PCjr. Printer required.
Topic: Art
Grade Level: 4 – adult

Print Shop makes it easy for you to design and print your own greeting cards, signs, stationery, and banners by combining graphics and text on the computer screen.



Poster created with Print Shop, *a program that helps produce cards, signs, stationery, and banners.*

With *Print Shop,* you can make personalized certificates of achievement, holiday banners, report covers, lettering for bulletin boards, posters to advertise school events, signs for parent-teacher night, programs for the school play, and much more.

The program's best feature is its ease of use. All of the directions are provided on the computer screen. After loading the program, you customize it by selecting your printer and printer interface card from a list of popular brands.

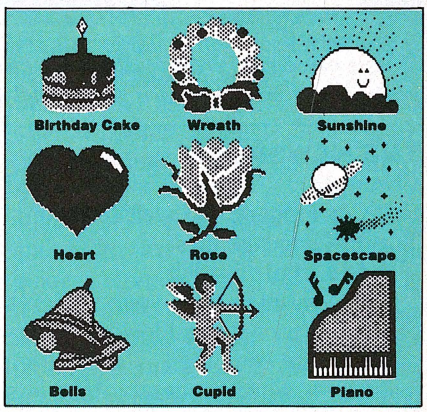
The main menu then offers a choice of several activities. You can design and print a 4-by-5-inch greeting card, an 8-by-10-inch sign, stationery letterhead, or a banner that is eight inches high and of unlimited length.

The program's graphic options are extensive. For example, if you are designing a greeting card, you can choose from nine different border designs, 50 predrawn pictures in three different sizes (small, medium, and large), three layout options (staggered, tiled, and custom), and eight type fonts available in solid, outline, or 3-D forms and in two sizes.

You can also use the graphics editor to alter the predrawn pictures on the disk. For example, you can change the hands on a predrawn clock to show the time of a specific meeting.

Or you can use the keyboard, a joystick, or a Koala Pad to create your own original designs.

The program's only problem is printing speed. Printing a simple greeting card or sign takes about six minutes. Banners take longer. Because *Print Shop* ties up the computer during this time, it is not a good program to use when the computer room is full of students.



A sampling of the 50 predrawn pictures included in Print Shop.

Any school would benefit from *Print Shop*'s ability to produce professional-looking greeting cards, stationery, signs, and banners at a fraction of the cost of a real print shop. *Print Shop* provides excellent value for your money.

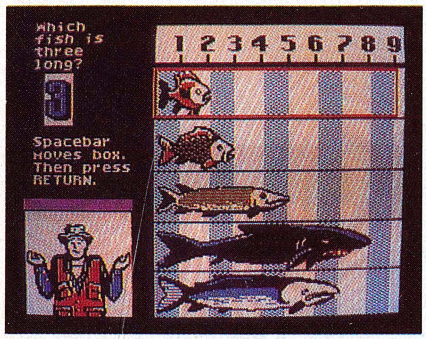
Price: $49.95 for Apple; $44.95 for Commodore and Atari; $59.95 for IBM.
Policy: Apple users can make one free backup copy; Commodore and Atari users can purchase a backup for $7.95.
Additional Info: *Graphics Library* and *Graphics Library 2* contain 120

SOFTWARE SHOWCASE

different graphics to expand *Print Shop*'s capabilities. Each program costs $24.95 and is available for Apple, Commodore, and Atari computers. *The Print Shop Companion,* available for Apple computers, features new type styles and borders, a custom calendar feature, and an enhanced graphics editor. It costs $39.95.

Source: Broderbund Software, 17 Paul Dr., San Rafael, CA 94903; 415/479-1170.

Leslie Eiser, McGill University
Beaconsfield, Quebec



In Fish Scales, *students use an electronic measuring stick to compare fish.*

FISH SCALES

Computer: Apple II series
Topic: Math
Grade Level: Preschool–2

A friendly fisherman welcomes children to *Fish Scales,* a program that contains six measurement games. The activities are all based on a fish theme. They help children learn to measure for height, length, and distance, and to use these measurements to compare sizes and distances.

In the first game, "Fish Jump," kids press any number key from "1" to "9." A measuring stick rises out of the water on the screen and displays the chosen number of units. Then a fish leaps out of the water and over the stick. The purpose of the game is to give the child a physical representation of different heights.

A similar on-screen measuring stick is used in the remaining five games. These games are more challenging, though. For example, in "Today's Catch," kids use the on-screen stick to measure each fish the friendly fisherman catches. In "Which Fish?" children use the stick to determine which of several fish has the same length as a target number.

"Fishing Derby," a game in which two players use their skills with a measuring stick to see who can catch the most fish, is by far the most interesting activity on the disk.

I found the program to be most attractive to children in kindergarten and first grade.

The brief user's guide provides adequate operating instructions and includes two reproducible worksheets that correlate with the program's activities.

Songs and sound effects accompany the games. In many cases, they are distracting when you use this program in a classroom setting. Aside from this slight annoyance, *Fish Scales* is a useful reinforcement tool for teaching measurement.

Price: $29.95
Policy: $15 backup; 30-day preview.
Source: Developmental Learning Materials, One DLM Park, Allen, TX 75002; 800/527-4747.

Joanne Marien, Principal
Haldane Elementary School
Cold Spring, NY

BIG BIRD'S FUNHOUSE

Computer: Commodore 64 (cartridge or disk), Atari (cartridge, 48K disk, or 48K cassette)
Topic: Memory and sequence skills
Grade Level: Preschool–1

Big Bird and some of his Muppet friends are playing Hide and Seek in the Funhouse. Big Bird is It. But who is hiding? It's your job to figure out which pals are hiding and to bring them out of their hiding places.

That's the idea behind each of the five levels of *Big Bird's Funhouse,* a computerized Hide-and-Seek game.

In the first level of the game, children select the Muppet pals that they want to be the hiders. They do this by touching the pictures of their chosen pals on a keyboard overlay. As each pal is touched, it pops up on the screen and the computer plays a tune designated just for that pal. After the hiders are chosen, the child presses

(continued)

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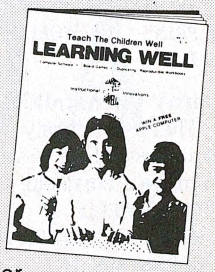

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ANSWERS TO POSTER WORKSHEET

Here is the completed crossword puzzle for the intermediate worksheet (page 21) titled "COMPUTER CROSSWORD PUZZLE."

1. DISK DRIVE
2. KEYBOARD
3. RECORDER
4. SYSTEM
5. MODEM
6. MONITOR
7. JOYSTICK
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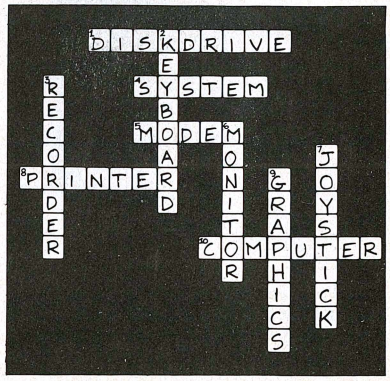
10. COMPUTER



ANSWERS TO "MICRO TIMES"

(pages 3a-4a)

Bug Buster

Here is the corrected version of the program.

```
NEW
10 PRINT "BORIS BRAGGER IS THE"
20 PRINT "BEST PERSON IN"
30 PRINT "THE WORLD!
40 END
```

Corny Cornstalk!

There are many ways to do the exercises. Here is a sample program to make a cornfield.

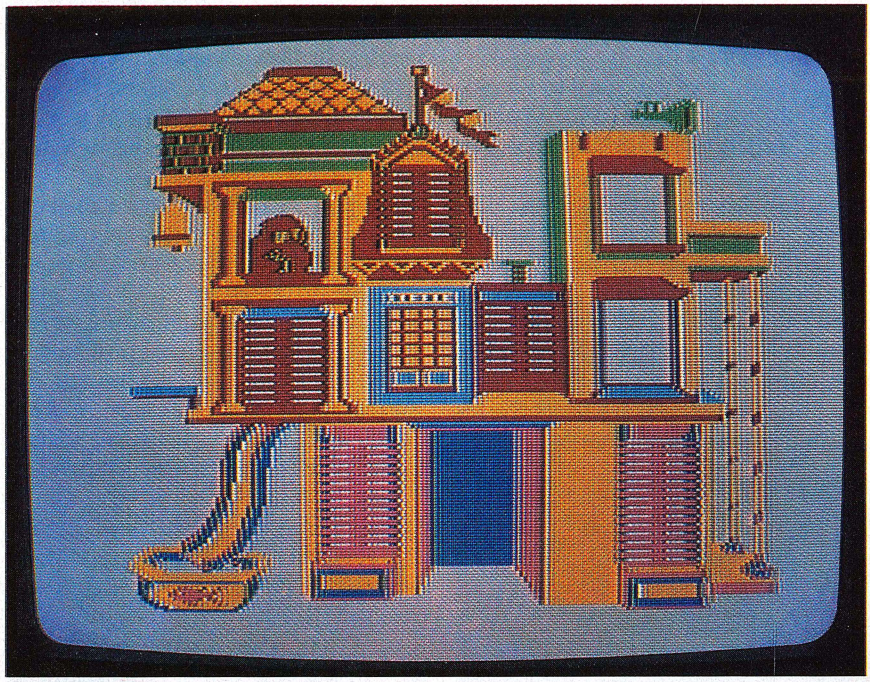
```
TO CORNFIELD
  HT RT 90 FD 277 LT 90
  CORNSTALK 14
  SETH 0 BK 95
  RT 90 FD 60 LT 90
  CORNSTALK 14
  SETH 0 BK 95
  LT 90 FD 120 RT 90
  CORNSTALK 14
END

TO CORNSTALK :S
  RLEAF :S
  IF :S > 10 RCORN
  LLEAF :S
  IF :S > 10 LCORN
  FD :S
  IF :S < 6 TASSLE STOP
  CORNSTALK :S-1
END
```

Note: Apple Logo users add brackets around RCORN, LCORN, and TASSLE STOP.

```
TO RLEAF :S
  REPEAT 2 [RT 30 FD :S]
  RT 60 FD :S
  BK :S LT 60
  REPEAT 2 [BK :S LT 30]
END

TO LLEAF :S
  REPEAT 2 [LT 30 FD :S]
  LT 60 FD :S
  BK :S RT 60
  REPEAT 2 [BK :S RT 30]
END

TO RCORN
  RT 90
  REPEAT 2 [FD 4 LT 45 FD 12 LT 45 FD 4
LT 90]
  SETH 0
END

TO LCORN
  LT 90
  REPEAT 2 [FD 4 RT 45 FD 12 RT 45 FD 4
RT 90]
  SETH 0
END

TO TASSLE
  LT 45
  REPEAT 6 [FD 10 BK 10 RT 20]
END
```

SOFTWARE SHOWCASE

(continued from page 49)



Students touch pictures of Muppet characters on a keyboard overlay to make them appear in Big Bird's Funhouse, *a Hide-and-Seek game.*

the space bar. The hiders scurry around the Funhouse in search of a hiding place and then disappear. The child must remember which characters are hiding and then press the keys that correspond to the missing Muppets. If he or she presses the right keys, the hiders reappear.

Each level of this game is designed to be more challenging than the last. For example, in the fourth level, Big Bird selects the characters that hide, and the child must not only recall these characters but must also repeat the order in which they hid.

The documentation includes a How-to-Play Card and an excellent manual that contains step-by-step directions, off-computer activity ideas, and a read-aloud story.

The only problem is the software's lengthy loading process. My computer took about two minutes to load the program.

The program's excellent graphics, sound, and general design justify the use of the computer to develop prereading and counting skills. My students reacted very favorably to it.

Price: $24.95

Policy: Backup included; 30-day preview.

Source: CBS Software, One Fawcett Place, Greenwich, CT 06836; 800/ASK-CBS4.

Philip Ingber
District Computer Coordinator
Nyack Public Schools, Nyack, NY

REGIONS OF THE UNITED STATES

Computer: TRS-80 Models I, III, 4; Commodore 64; Apple II series
Topic: Social studies
Grade Level: 5–12

Can you identify the United States region that this clue describes? "This region produces much marble, granite, and cranberries."

If you guessed New England, you would earn five points in *Regions of the United States,* a program that helps teach geography skills. The program has two parts.

The first part introduces the states by location and shape. First it identifies each of seven regions on a map of the United States. Next it identifies each state on a regional map.

It also provides two 20-question quizzes on the states. In the beginner's quiz, students identify states on

(continued on page 52)

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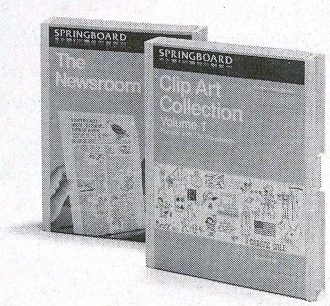

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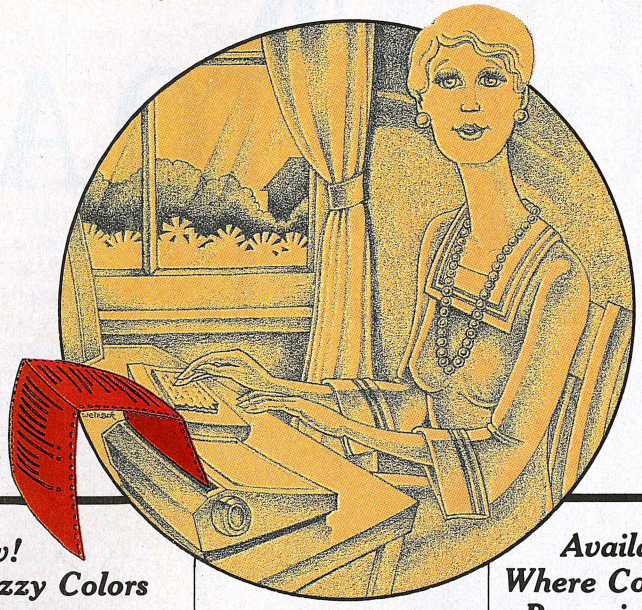

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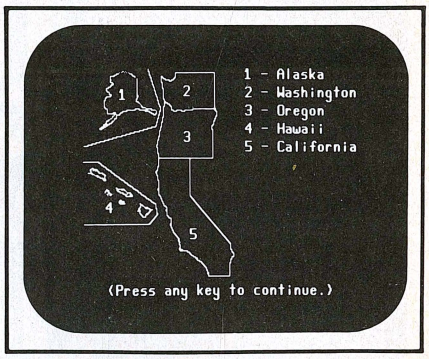

One of seven regions studied in Regions of the United States.

a map by pressing corresponding numbers. In the more advanced quiz, students must identify both the regions and the states and spell the names of the states correctly.

In the second part of the program, the computer randomly selects a region and presents three clues about it, one at a time. The clues contain information about the climates, landforms, products, and cities of the various regions. Students use the clues to identify a region. They earn points for identifying a region correctly, but the number of points decreases each time the computer provides another clue.

The program contains a management system that saves scores for each student. Teachers may view scores for an individual or for an entire class.

The documentation provides clear operating instructions, interesting fact sheets about each of the regions, and suggestions for using the program with your class. It also provides sources of additional information about United States regions.

Regions of the United States coordinates well with a social studies unit on U.S. geography. It could be used to introduce, develop, or review the content of the curriculum.

Price: $59.95

Policy: Backup included; 30-day preview.

Source: Educational Activities, PO Box 392, Freeport, NY 11520; 800/645-3739. In New York, Alaska, and Hawaii, call collect 516/223-4666.

Barbara Devir, Fourth Grade Teacher
Woodside School, Peekskill, NY ■

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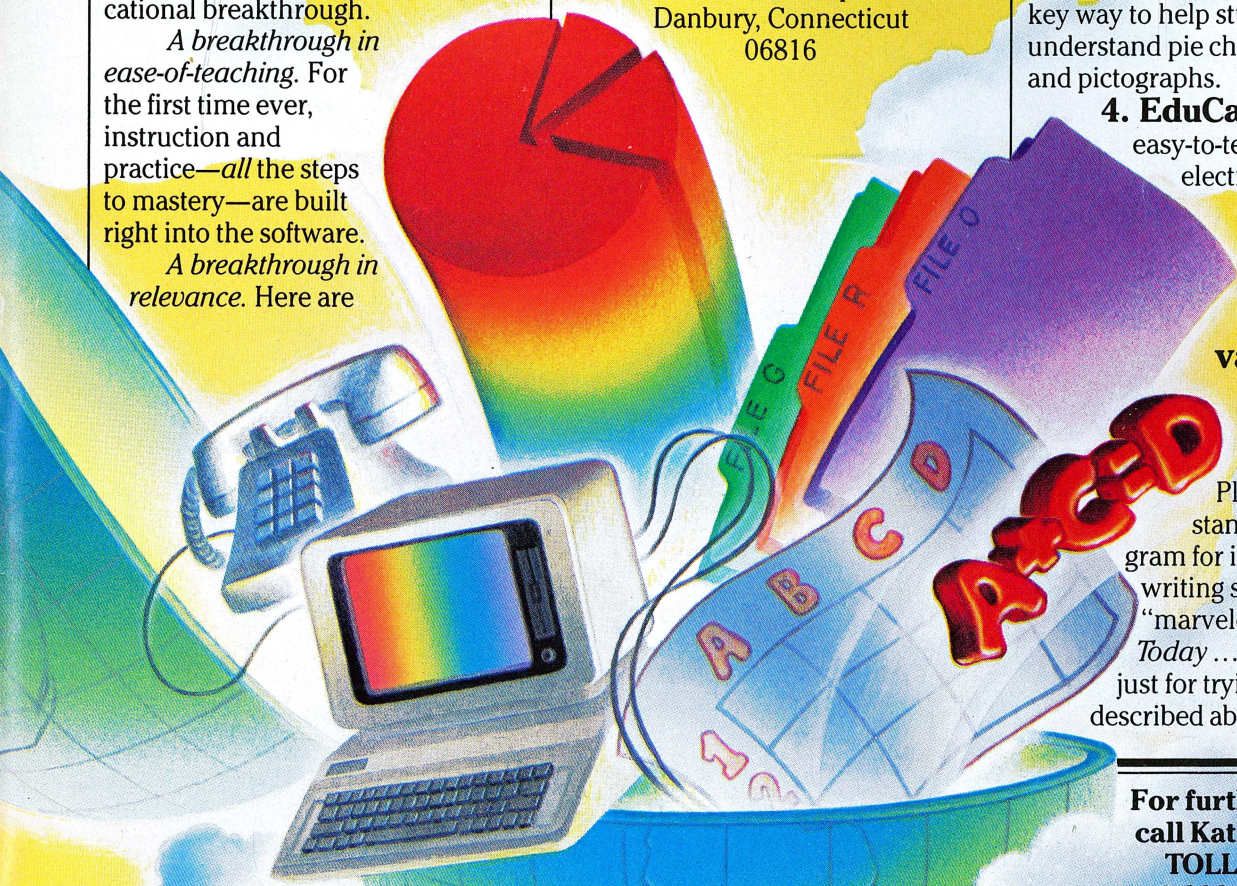

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